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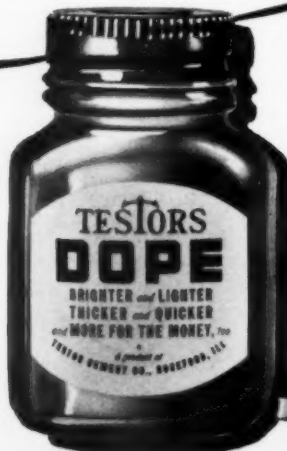


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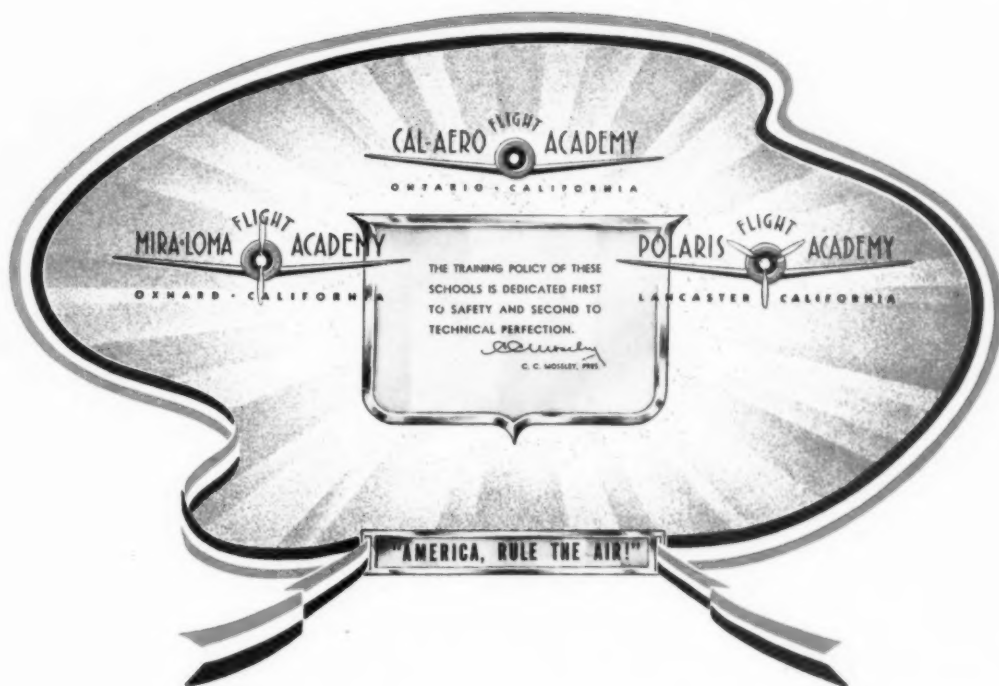
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13TH YEAR OF PUBLICATION

# MODEL Airplane NEWS

JUNE, 1942

VOL. XXVI, No. 6

Special to MODEL AIRPLANE NEWS

THE aviation industry has at last been provided with an A-1-A priority rating which places it on an equal footing with shipbuilding, tanks and armament industries in the matter of the flow of vitally-needed materials. Up until recently an A-1-D rating allowed it to purchase only those materials and in such quantities secondary to the needs of ship and tank builders. But now this vital aviation building program now goes into high gear with plenty of badly needed aluminum and steel assured in a smooth, steady flow.

A plan has been perfected whereby airlines will assume a vast share of the Army and Navy, ferrying duties, according to recent announcements from Washington. Under this plan regularly scheduled airline flights will not be halted, or even slowed as they carry a preponderance of military personnel and civilian official traffic. Theory of the plan is that airline pilots will work 8 hours overtime per week (a single cross-country flight) for the Army and Navy ferrying services. This overtime will not, it is believed, place a physical strain upon the pilots (normally working only 36 hours per week or less) and it is believed that the nation's 1,000 scheduled airline pilots could ferry at least 500 airplanes per week from coast to coast. This would more than man the required number of planes to be ferried. Greatest problem, however, seems to be retention of pilots by the airlines, enlistments and call-ups are continuing heavily because more than 75% of the nation's airline pilots are Army or Navy trained and hold reserve commissions.

The Civilian Pilot Training Program has at last been directly aligned with the Army and Navy as a prep-school for prospective military pilots. The CPTP has long been under a confused status for it was never clear just what happened after a student had graduated from the course. The present plan calls preliminary ground and flight training to students as a prelude to entrance into regular military flying schools. This serves not only to speed up the huge pilot training program but to relieve some of the congestion now becoming serious at Army and Navy primary training flying schools.

Huge Army and Navy aviation appropriation bills which far overshadow any even dreamed of one year ago continue to be passed with more and bigger bills being promised for the future. The most recent appropriations have been six billion dollars for the Navy Bureau of Aeronautics for the purchase of airplanes and training of pilots and technicians. The Army Air Forces have received an appropriation of 12½ billion dollars for a similar purpose. Present Army plans call for the establishment of an Army Air Force of TWO MILLION pilots, mechanics, officers and

enlisted men as compared with the 1¼ million in the Luftwaffe and the one million in the Royal Air Force.

Proving their worth in large scale maneuvers held in the past year, the "Grasshoppers" are now coming in for specific attention. Grasshoppers are the Army's lightplanes, Taylor Cubs, Taylorcrafts, Stinsons, Aeroncas, etc., which have been used widely under all possible conditions for short-range military liaison work in close cooperation with ground forces. The Army has ordered several hundred of these ships from these four manufacturers and present plans call for purchase of several thousand in the very near future. No more civilian purchases of these planes will be allowed, the Army says, as these lightplane manufacturers go into full scale production for the Army Air Forces. Chief advantage of the type lies in low landing speed, short landing distance, slow air speed necessary for accurate artillery spotting and simplicity of operation.

Plans formulated by American Export Airlines' trans-Atlantic service have been approved and flights are now under way between New York and a secret port in Ireland. The giant Sikorsky Excaltor four-motor flyingboats are principally for quick transfer of government personnel and documents necessary between London and New York. Because of wartime secrecy no details of flight schedules, takeoff or landing points have been announced other than in broad, general terms. Close diplomatic and military cooperation between these two world centers of democracies, hubs of giant and powerful wheels, is now assured. Pan American has concentrated attention on the operation of vital aircraft supply lines and has suspended passenger operations across the Atlantic and Pacific. P.A.A., it was, that established the aerial Burma Road across the South Atlantic to Africa and on to India.

Latest Timm offer: a new plastic tandem two-sea trainer modeled along the lines of Col. V. E. Clark's new creation. First ship test-flown recently surpassed expectations. Howard Hughes, vastly interested, promises something new in a high speed military plane built along the same principle.

Curtiss' new XSO3C-1 is at last a "new and different" ship. Powered by an air-cooled Ranger 12-cylinder inverted "Vee" motor the craft is a single float two seater mid-wing designed for operation from cruisers and battleships.

Twenty-two new Boeing ships for Pan American Airways: Three huge Boeing 307-S "Stratoliners" and nineteen gargantuan "Clipper" flying boats at a cost of \$6,000,000. All will be used on the new 48-hours to South American schedules.

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Edited by  
Charles Hampson Grant

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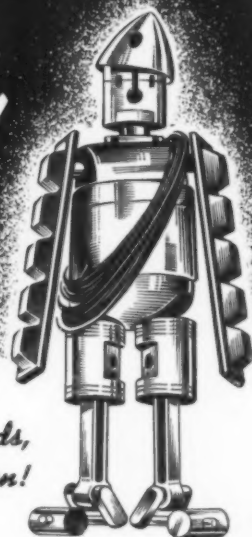




# Trained Men

VS.

# MATERIALS



*Aviation has JOBS for thousands,  
but CAREERS only for trained men!*

**T**he finest of material is necessary for the aircraft industry's tremendous effort to fulfill President Roosevelt's inspiring demand for 185,000 warplanes, but inanimate material—no matter how essential—is useless without the skill to mould it into the finished plane. While it has been necessary for the industry to accept thousands of single-phase workers from cheap "quickie" courses, these men are scarcely more than another class of material, which must be moulded and directed by those properly trained to occupy responsible supervisory positions. The career man with long-range training is the most essential single unit in aviation's war production . . . and ONLY he will continue to be essential through the readjustments that must follow when America's production shifts back to peace time schedules.

The executives who have made aviation THEIR career know that the value of each man is governed by two factors: his intelligent sincerity in selecting aviation as his life work, and THE ABILITY AND EXPERIENCE OF THOSE WHO TRAIN HIM FOR THAT CAREER. They know that Curtiss-Wright Technical Institute graduates are—and for many years have been—thoroughly qualified to fill the industry's exacting requirements.

Located in the very center and a very important part of Southern California's great aircraft industry, with its more than two billion dollars in unfilled orders, Curtiss-Wright Tec has come to be recognized as the nation's leading institution for the training of Aeronautical Engineers and Master Mechanics. Mr. Donald Douglas, President of the great Douglas Aircraft Com-

pany, chose this school for his own son's training, which pointedly indicates the high standing Curtiss-Wright Tec has attained in the aircraft industry since its establishment in 1929.

It is imperative that before you invest in a course of career training you determine what the returns will be on your investment . . . for your choice of a school in which to take your training will determine how much money you will make all the rest of your life.

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writes an Instructor in the Air Corps at  
"THE WEST POINT  
OF THE AIR"

Continuing, he says: "Especially during the time I was studying theory of flight and aerodynamics did I appreciate the hours I had spent 'doping out' the tricks of one of my 'midgets'."

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# OUR NEW AIR FORCE

**It has been reorganized  
into the most powerful  
striking force in the world**



(Top) Douglas A-20 attack bombers ready to strike. (Above) Uncle Sam's versatile Consolidated amphibian, operates from land or water and flies over 4000 miles nonstop. Speed is about 200 m.p.h. (Below) Martin PBM-1, heavily armed long-range boat used on patrol. (Bottom) Huge Douglas C-54 transport will prove of vital importance in moving troops quickly



**T**OTAL war, again, has enveloped us, regenerating a seemingly never-dying flame which must, history tells, burst anew each quarter-century. But, like all wars, this one is different; for it is an air-war. Military aviation, born in the last war as largely thrilling sky chases in motorized box-kites, has grown on powerful wings until today it has assumed the major portion of land, sea and sky warfare. Today's war is the bomber against everything; against legions of infantry, lines of tanks, squadrons of ships, armadas of defending fighter planes.

But brute strength in the form of fast, heavy bombers is not enough. These things must be directed, attacks planned, targets chosen carefully, tactics skillfully mapped out in advance. Organization and direction, then, contain the secret of military success.

Never before in our history has our military establishment been called upon to exercise its native American talent for organization as it has now. The Army and Navy have more men, more machines and more equipment than ever before. The entire world has become the operating area for our forces. These have necessitated a paring down of military red tape, speeding up of decisions, unifying of the chain of command and, above all, development of a grand strategy.

These things cannot be done with a redundant, complicated organization nor with inter-organizations of varying authority. And each of the various military and naval services have had sometimes vicious battles for independence and autonomy. None more so than with the air service.

This new military weapon was born within the Signal Corps, a small branch of the United States Army. The first World War gave aviation its chance and out of it came the American Air Service. Still fighting to prove itself, this organization evolved into the Army Air Corps during the heyday of General "Billy" Mitchell who, in 1921, successfully demonstrated the effectiveness of the bomber against ships and who began the long fight for an independent air arm.

In the Spring of 1935 General Oscar Westover, then Chief of the Air Corps, began the force's re-organization with formation of the General Headquarters Air Force (G.H.Q.), consisting of a small number of combat squadrons formed to act as a fast-moving, striking force, whose chief advantage lay in its mobile bases. Under the command of General Frank M. Andrews, many full scale maneuvers were conducted to test this force in all types of weather and under all possible conditions, and its initial



# IS STREAMLINED

by **ROBERT McLARREN**



Lockheed P-38 pursuits in their warpaint; 400 m.p.h. "flying death"



World's largest flying monster passing over a new war plant; the Douglas B-19 bomber on one of its first flights



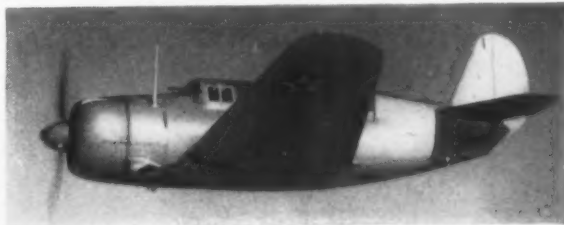
The Army's standard heavy bomber Boeing B-17E, bristles with guns. Often planes of this type are shot full of holes but still keep flying. (Below) The Beech bombardment instruction plane trains men to land 'em on the target



The Fairchild trainer is standard for training our army eaglets; powered with a Ranger engine



Army's standard and fastest medium bomber, Martin B-26 which has a speed of approximately 400 m.p.h. (Below) America's most deadly dive bomber, the Curtiss SB2C-1, carries greater bomb loads than any ship of its class





Douglas TBD-1 Devastator torpedo bomber, feared most by battleships. (Right above) Hundreds of Vultee trainers for our future pilots



Army gliders off for a flight; now used to train pilots for glider invasions. (Left) New Army "cone" parachute is smaller and more efficient than old type

success led directly to the formation of the United States Army Air Forces.

This huge force needed a supreme legislative authority and, after a vacancy of many years, the post of Assistant Secretary of War for Air was filled by President Roosevelt with the appointment of Honorable Robert A. Lovett to this high office.

Active executive authority of this great arm was finally placed with the General Staff and for the first time in history an air officer was appointed to this supreme court of the Army. This officer, one of the oldest in point of years of flying service, was Major-General Henry H. Arnold.

Now has come definite and final recognition of the military airplane and its attendant forces as a vital power in modern military operations. For President Roosevelt has appointed four officers to head our military forces, created three major and equal branches of the service. In command of the entire United States Army is General George C. Marshall, head of the newly created arms: The Army Ground Forces, the Army Air Forces and the Service of

Supply, each equal in authority. And so the battle for recognition has been won, for within the Army structure, the Army Air Forces is independent, supreme, free to develop its own strength.

Newly appointed Lieut.-General Henry H. "Hap" Arnold, *Chief of the Air Forces*, has organized a simple, compact and efficient group of veteran airmen officers to command the world's most powerful air force.

It has not been a simple task, nor a quick one, for it has taken thousands of men more than thirty years to accomplish it, but, from the top down, here is how the streamlining of our new air force has been accomplished:

At the head of all our defense forces, *Commander-in-Chief of the Army and the Navy* is President Franklin D. Roosevelt. Directly responsible to him is the *Secretary of War* Henry Stimson and *Assistant Secretary of War for Air*, Robert A. Lovett. *Chief of the Army*, General George C. Marshall directs planning of all military strategy, with planning of aviation tactics by *Chief of the Air Forces*, Lieut.-General Henry H. Arnold.

The Air Forces now have their own General Staff, the old Army General Staff system, first organized in 1903, having been abolished. *Chief of the Air Staff* is Major General Millard F. Harmon and *Deputy Chief of Staff* is Brig. General Laurence S. Kuter. The *Assistant Chief of Staff*, for the various staff functions are Colonel F. Trubee Davison (A-1, recently called to duty, formerly Assistant Secretary of War for Air under President Coolidge), Colonel Robert L. Walsh (A-2), Colonel Hoyt S. Vandenberg (A-3) and Colonel Thomas J. Hanley, Jr. (A-4). Lieut. Colonel Howard A. Craig is Assistant Chief of Staff for Plans.

This Staff controls the operation of the *Combat Command*, the *Materiel Command* and the *Training Command*.

The *Combat Command* is basically the G.H.Q. Air Force on an enlarged and expanded scale; it now comprises all combat equipment and squadrons of the entire Army Air Forces. It is divided into the *Bomber Command*, comprising all bombardment squadrons, and *Interceptor Command*, comprising pursuit and interceptor squadrons.

Largely to the *Interceptor Command* falls responsibility of the air raid warning service and organization of air raid warden and spotting systems. The *Interceptor Command*, it is, orders the various warnings and alerts and, in necessity, complete blackouts.

To efficiently direct such a vast number of men and machines the *Combat Command* has divided the United States into four *Air Districts*, just as the Army has its Corps Areas and the Navy its Naval Districts. These air districts are designated by their geographical location and thus the *North-east*, *North-west*, *South-east* and *South-west* air districts, each taking in all the states and aviation activities of their respective regions. (See map.)

The direct tactical command of these districts are the *Air Forces*, and the *First Air Force* is located at Mitchel Field, Long Island, New York. From this base operate the *First Bomber Command* and *First Interceptor Command*, protecting the world's richest city. Within each of these

(Continued on page 53)



# YOUR GAS MODEL'S FIRST FLIGHT

Adjustment and test  
flight procedure that  
help to eliminate  
crackups

by **CHARLES  
HAMPSON GRANT**

HAVE you ever seen a model plane builder rush the construction of his plane to completion, hurriedly slap on a few finishing touches and dash out to the flying field with just one idea—seeing his brainchild perform. Apparently the type of performance does not always concern him, or at least he is an optimist.

Then, with a bound the little plane is off the ground and going places. The heart of the shop-worn modelist stands still as he watches intently the course of his ship—will it be a success or failure?

Through the mind of the flier and in fact through the whole procedure, runs the element of "luck"; aviators from time immemorial have seemed to be imbued with the idea of "taking chances"—even in model flying. However, when it is possible to reduce the number and effect of disastrous crashes by a little restraint it is not worth while to give in to the flying impulse before the little craft is ready to take the air. Is it wise to sacrifice hours, days and even weeks of careful precise work by neglecting at the last minute the most important element in creating an airplane: throwing caution to the winds and taking a chance by flying a plane that hasn't been carefully adjusted?

The success of any flight is 50% adjustment and 50% design. It is illogical to work out the design with great care and then entirely neglect the adjustment; so we caution the model builder to pause after his plane is completed and restrain that impulse to fly it without carefully checking over his craft.

One very important operation must be performed after the plane is built and before it is flown, and care in performing this will result in many times more successful flights than if it is omitted. By

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Model Airplane News - June 1942

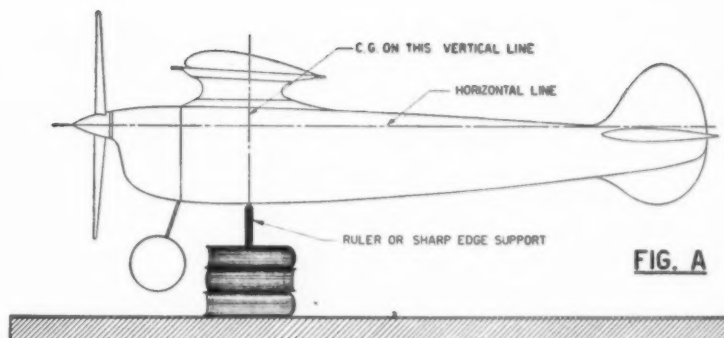


FIG. A

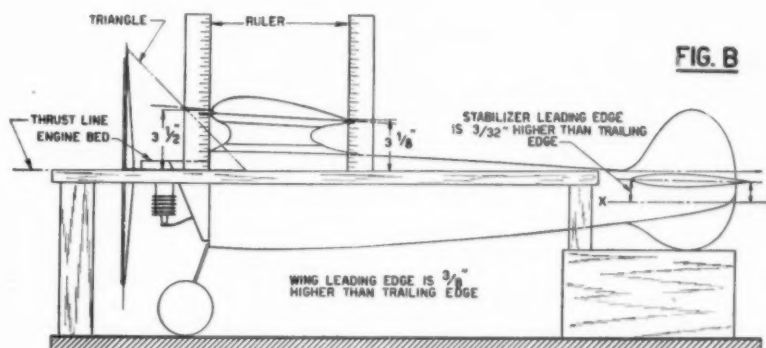


FIG. B

its observance model builders have been known to keep a gas model in flying condition for 6 or 7 years with only minor repairs; in fact the second gas model design ever flown, the original KG, is still in existence and flyable at the present time. The counterpart of this important operation in large aircraft is "the rigging of a plane." In the last war riggers were an essential element in airplane maintenance, so now let us see how a gas model should be rigged before flight.

The first procedure is to check the structure of your plane, the balance and angles of wing and tail, to see if they conform to design specifications. First locate the center of gravity by resting the ship on a sharp-edge rule passing beneath the fuselage perpendicular to its longitudinal axis. Move the plane backward or forward on the rule until it balances with the thrust line horizontal. See figure A.

From the rule's point of contact draw a vertical line upward across the side of the fuselage while the ship is balanced; the c.g. will be somewhere on this line. In order to find the exact point, the plane must be suspended from a string in another position. We suggest tying a string to the propeller shaft using it to suspend the plane.

Now after the string line is continued down across the side of the fuselage it will intersect the first line drawn; the c.g. will be at the center of the airplane at the intersection point.

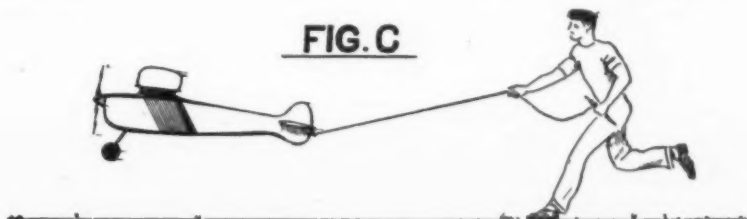
It is now possible to properly locate the wing. Move it backward or forward until the cord center point is directly above the c.g.

One other factor relative to which all flying adjustments are made is the thrust line; so the next operation is to locate and represent it by drawing a line across the body side from front to rear. This should be done most carefully for wing and tail angles are measured relative to it, determining the vital balance of the model.

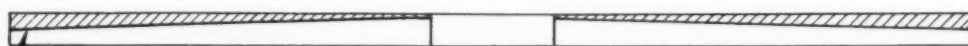
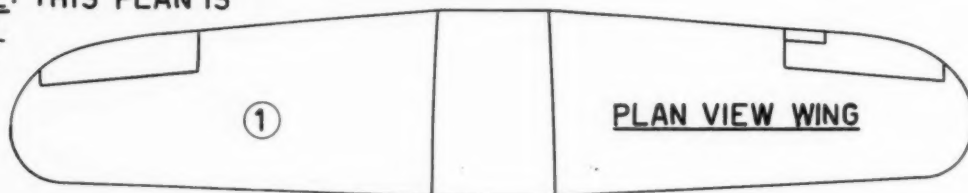
First rest the plane on your workbench or table, raise the tail and support it with blocks, books or other objects, as shown in figure B. Now place a rule or long straight stick close to the body and parallel to thrust line, supporting this stick so a sight may be taken along it and its angle properly adjusted. The stick's front end should be exactly on a level with the motor shaft center line, or the lower face of the engine bed against which the engine lugs rest.

(Continued on page 36)

FIG. C



**NOTE: THIS PLAN IS  
FULL  
SIZE**



**CUT AWAY SHADED PORTION**

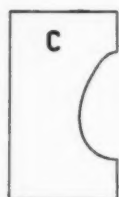
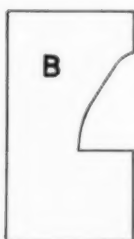
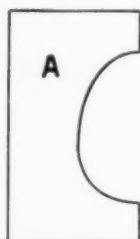


**LEADING EDGE**

**TRIM**



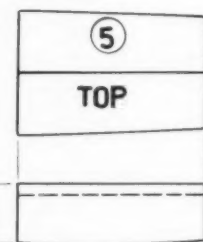
**DIHEDRAL GAGE**



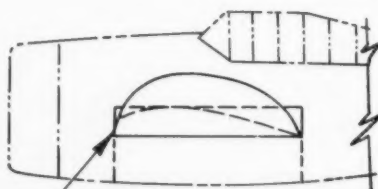
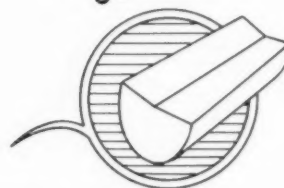
**WING SECTION AND  
BODY TEMPLATES**



**PROP SPINNER**



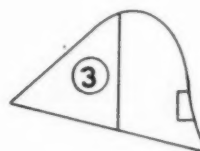
**BELLY BLOCK**



**WING END VIEW**



**ELEVATORS AND RUDDER**



**BREWSTER F2A-3  
IDENTIFICATION MODEL**

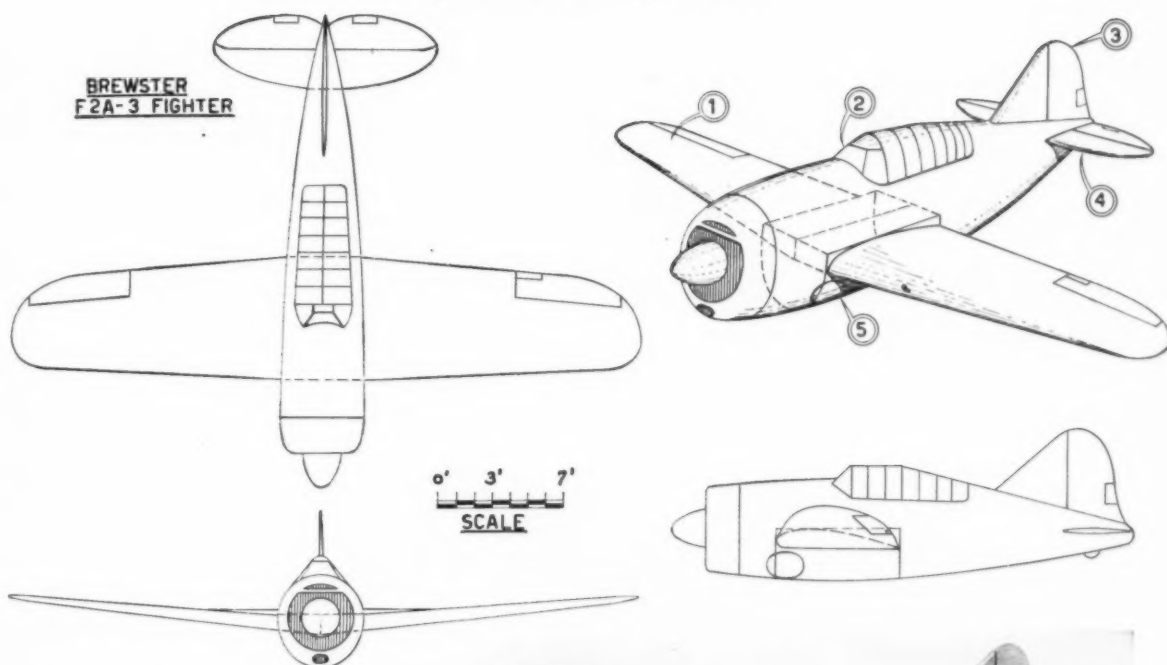
*Model Airplane News*



# MODELING PLANES FOR UNCLE SAM

Construct this solid scale model of the Brewster F2A-3 pursuit and help train our sky fighters

by **NICK LIMBER**



THE response of the nation's model builders to the Government's request for identification models has indeed been overwhelming. Throughout the country, in conjunction with school authorities, modelers new and old have gathered to turn out replicas of the world's fighting planes at a dizzy pace.

To those builders who have already constructed the first of the identification models may we of MODEL AIRPLANE NEWS say "congratulations,"—keep up the good work. To those builders who have not yet had complete information regarding this nationwide activity undertaken for Uncle Sam might we repeat a few essential details.

In order to train the thousands of aircraft spotters, gunners and other technicians of the Air Force in properly identifying aircraft in flight, range finding, gunnery and various other duties encountered in aircraft combat, the Government has issued an appeal for 500,000 scale models of various fighting aircraft. These models must meet certain specifications of the Bureau of Aeronautics if they are to benefit our armed forces.

Namely, they must be to uniform scale, one inch representing six feet; constructed of white pine, ash, gum, poplar or similar wood (balsa is too soft) and finished with dull black lacquer.

To supplement the official drawings and data issued by the Bureau of Aeronautics

of the Navy Department, MODEL AIRPLANE NEWS is publishing drawings and construction data of these models for those who have not been able to obtain official plans and data.

Last month (May issue) plans and instruction for constructing the Curtiss P40E were featured.

In this June issue appears an equally famous fighter—the Brewster F2A-3 or "Buffalo" as it is familiarly known.

Start by carving the fuselage from a block 1" x 1 1/4" x 4 1/4". Trace or scribe the top and side views of the body on the

wood block. Cut away the excess from the outlines and smooth the surfaces with sandpaper. Using a pocket knife, spokeshave, or rasp shape the fuselage in accordance with templates A, B, and C. Sandpaper is again used to finish the surface.

The wing is cut from a block of wood measuring 3/16" x 1 1/4" x 6". Trace the plan form of the wing to the block as with the fuselage. With a jig saw or similar instrument cut along the outside of the outline. When the excess wood has been trimmed, sandpaper the surface down to the

(Continued on page 50)

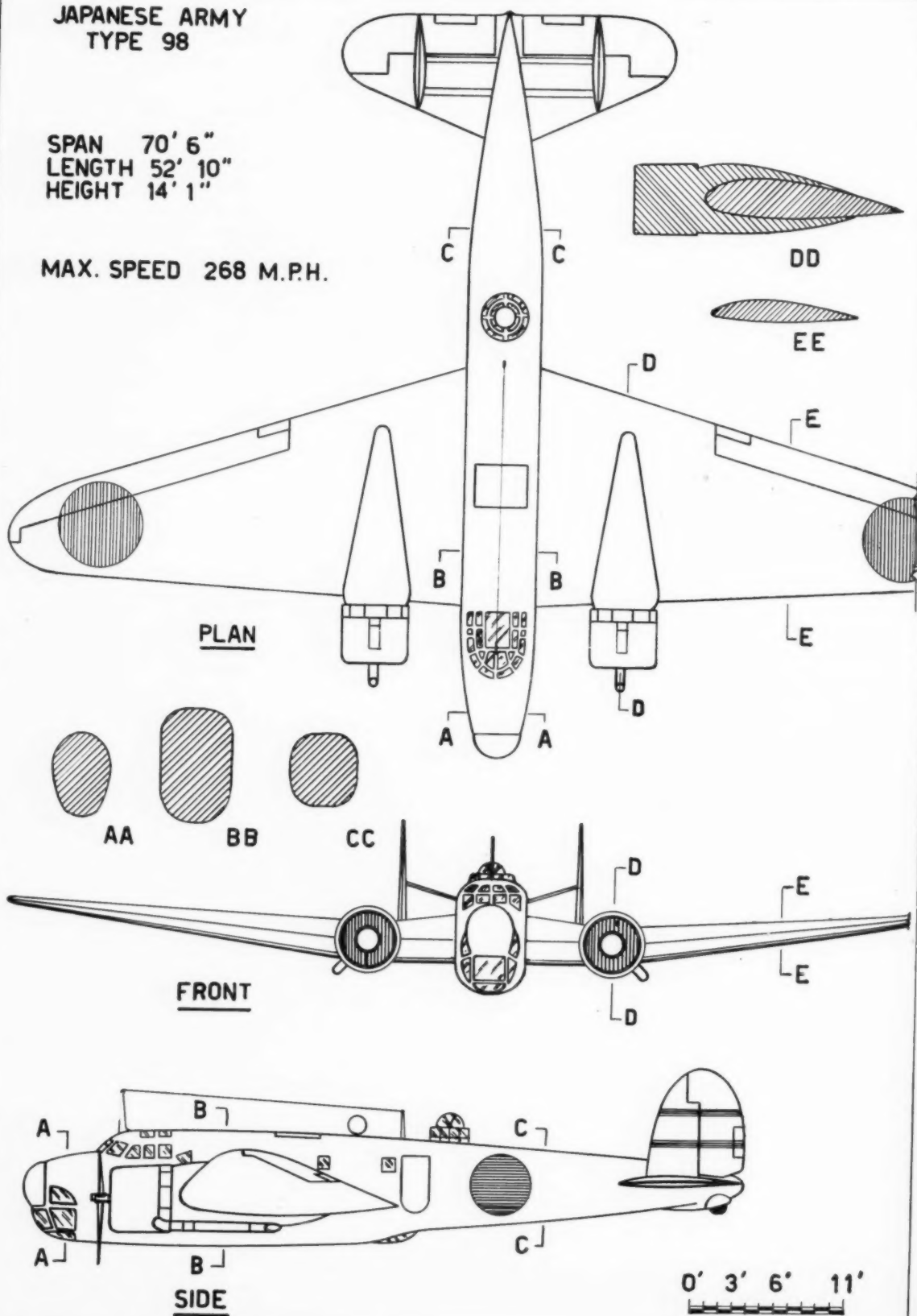


The completed model ready to start its instruction career with our fighting forces

**JAPANESE ARMY  
TYPE 98**

SPAN 70' 6"  
LENGTH 52' 10"  
HEIGHT 14' 1"

MAX. SPEED 268 M.P.H.



# SKY SCOUTS

Learn to spot enemy planes  
and help defend America

## LESSON 5

HERE is good news for all Sky Scouts! The first silver Sky Scout pins are now ready and all who qualified by submitting two correct sets of answers will probably have received their pins.

Also all qualifying Scouts will be notified within a few days of other Scouts residing in their community. This will enable them to contact one another, form a unit and elect a leader. When this has been done, please notify Sky

(Continued on page 38)

## DESCRIPTION OF SILHOUETTES AT LOWER RIGHT

**PLANE 5A**—The Nakajima 94, two seat light bomber powered by a 550 hp. Nakajima III motor, has a span of 36 ft. 7 in., length 24 ft. 5 in. Fully loaded it weighs 5,720 lbs.; capable of attaining a speed of some 200 m.p.h. (Early models were slower, 186 m.p.h.) Protective armament appears to be one flexible gun mounted in the aft cockpit, but additional guns are probably located under the hood of the forward cockpit. The plane follows the general lines of early Voughts in almost every respect except the undercarriage, whose distinguishing feature is its antiquated cross bar.

**PLANE 5B**—The Hiro 97, long range flying-boat, is operated by the Nipponese Imperial Naval Air Service as a patrol bomber and troop transport. One of the largest airplanes in the Japanese service, the Hiro 97 measures 104 ft. from tip to tip; length 69 ft. 5 in. Fully loaded it weighs about 32,912 lbs. and develops a top speed of over 200 m.p.h. The ship is powered by four 720 hp. Hispano Suiza engines, which no doubt have been "redesigned" by the master imitators. As in all of their designs, when the Hiro 97 was "laid out" the Japs surveyed the field and then "borrowed" the lines of the French LeO H 24-6. The plane at present is the spearhead in all Nipponese overseas operations and is largely relied upon to transport troops.

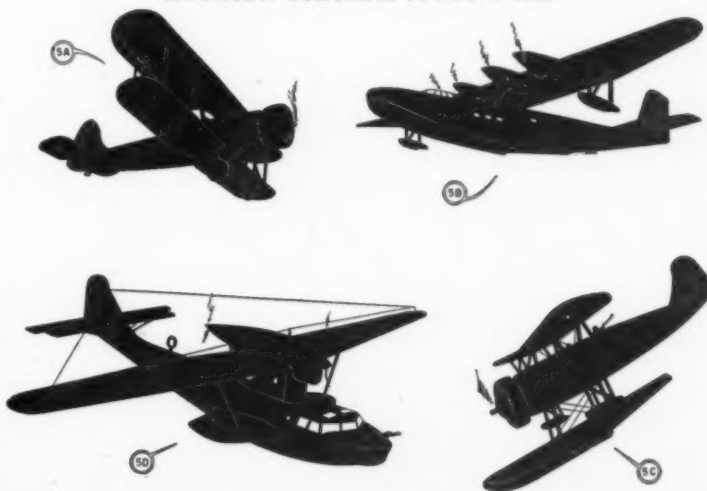
**PLANE 5C**—The Nakajima 90-11 two seat naval reconnaissance plane is powered by a 450 hp. Nakajima Jupiter engine and has an estimated top speed of about 190 m.p.h. Span is 39 ft. 4 in. and length 29 ft. 6 in. Fully loaded it weighs 5,500 lbs. Armament appears to be the same as on the Nakajima 94. This plane operates from war ships by catapult, mainly on scouting missions. Its presence signifies the approach of naval units.

**PLANE 5D**—The German Dornier Do 18K reconnaissance flyingboat is powered by two 600 hp. Junkers Jumo 205 liquid-cooled Diesel engines. It is capable of 160 m.p.h. with full military complement and has a range of over 3,000 miles. Fully loaded the plane weighs 22,000 lbs. It is designed for catapult takeoff as well as normal takeoff. Because of this, its range and formidable armament, it is an exceptionally dangerous menace to shipping and "hit and run" raiding. The craft is used extensively by the Nazi Naval Units and may be spotted along the U.S. Eastern seaboard before hostilities cease. Whether or not Japan has also been using this plane, we have not at the time of this writing been able to ascertain. Chief points of recognition are the tandem motors, high wing setting and the sponsons or stub wings.

THIS SHIP HAS  
BEEN DESCRIBED  
IN A  
PREVIOUS ARTICLE  
OF  
SKY SCOUTS  
CAN YOU IDENTIFY IT ?

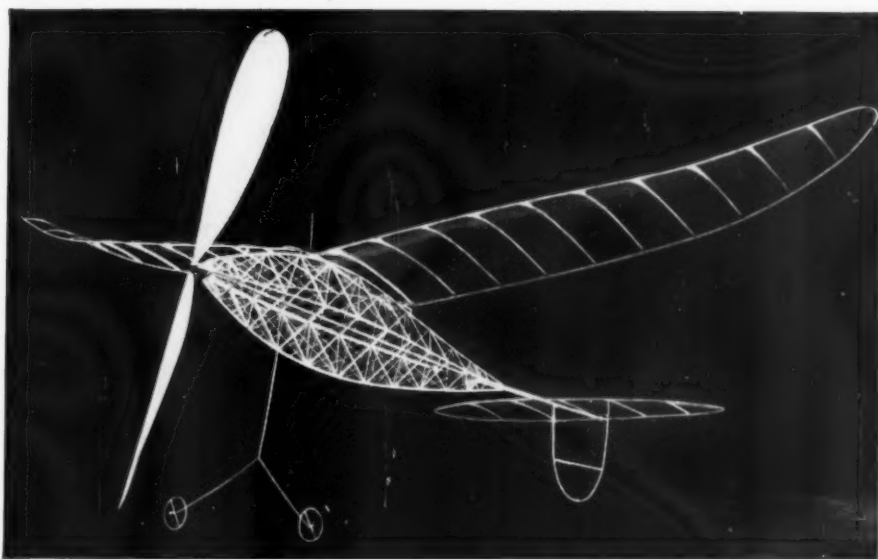


SEE PAGE 39 FOR NAME OF ABOVE SHIP









## NATIONALS BLOOMINGDALE TROPHY WINNER

**Light as a feather, with the duration of a homing pigeon, this indoor fuselage model won both the 1941 Nationals Open and 1940 Senior events—How you can build it**

by **GORDON CAIN**

INDOOR meets are conspicuous by the presence of one or two contestants involved in a belated attempt to get that last minute flight in, bare seconds before the contest's end. An informal gathering of team-mates soon accumulates to witness the uncomfortable individual's predicament; to jest of the hasty antics displayed by the intrepid builder, who probably doesn't know whether he's winding the rubber motor backwards or forwards, anyway. Finally a hurried minor adjustment here and there; a few additional hand winds and if the timer hasn't disappeared the fun begins!

A similar atmosphere prevailed at the 1940 National Meet. When the International Amphitheatre had practically emptied of spectators and contestants alike, Gordon Cain released his fuselage ship for its final flight just before the terminating whistle announced the contest's end.

The angle of launching was sufficient to climb the ship to 25 ft. before a slight misalignment of the freshly repaired boom brought a shallow dive-tendency into evidence. Three fellows restrained him by force, preventing him from whisking the ship out of the air as it came down within reach, while another, possessing presence of mind, checked its descent by walking a few yards under it, displacing air upwards with his hands. (Not allowed now.) With the knots in the wound motor diminishing at the nose, providing an advantageous center of gravity change about then, came a re-

demption in the model's actions, for it started climbing and reached 60 ft. altitude. It decided to land after staying aloft 15 minutes and 53 seconds, constituting high time for the day.

This victory was generally regarded as a "shot in the dark" event. However, the following year the same ship won the Fuselage Event again with ease, marking for the first time a two-year consecutive capture of the Bloomingdale Trophy, bring-

ing the famous cup to Boston for its fourth trip.

The prominent feature of this design is the general rigidity gained by the tungsten-braced wing being mounted close to the top corner of the diamond fuselage. The wing's elevated position of about 1-1/2" above the thrust line is ample height for stability.

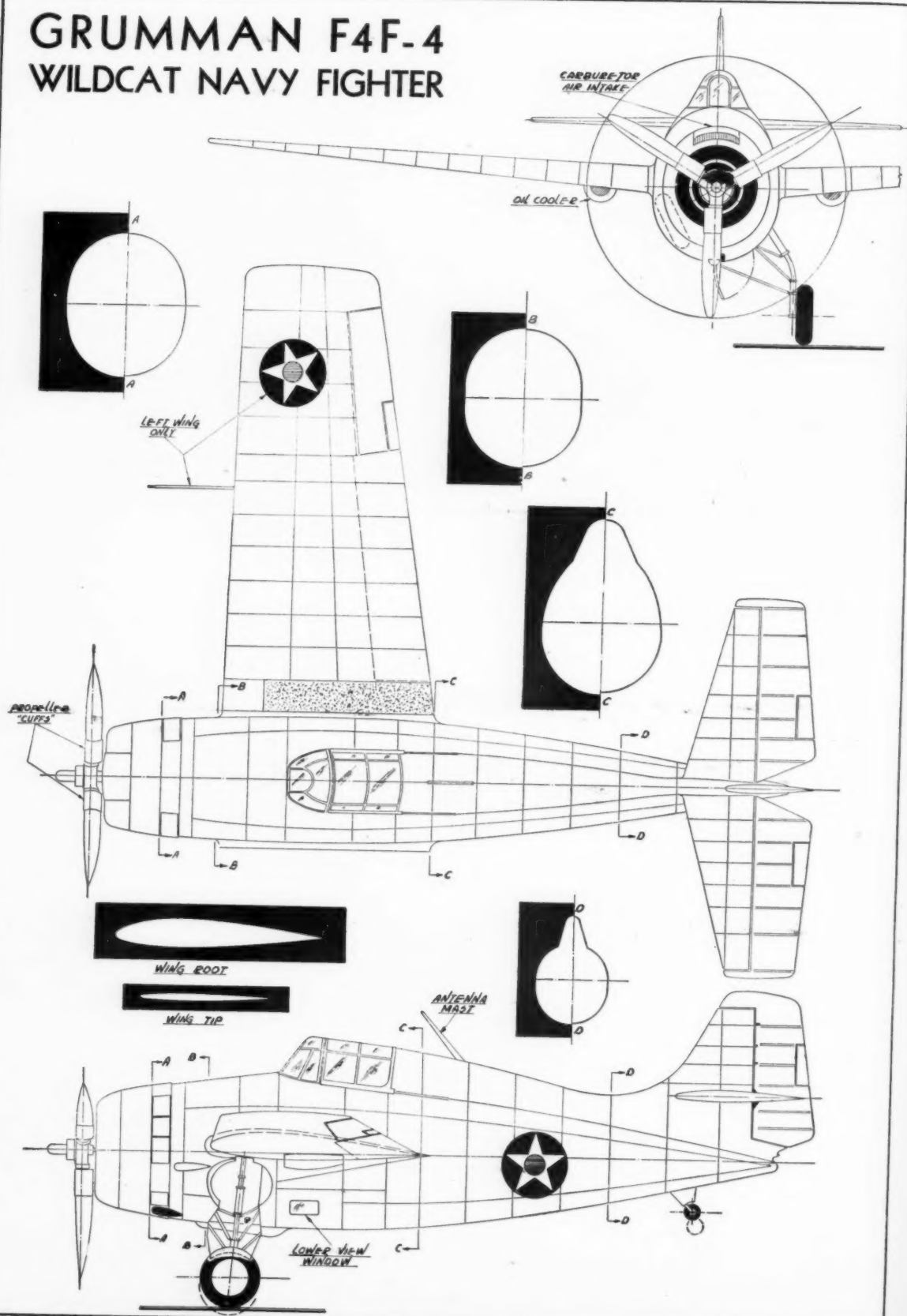
Construction of this prize winner is not too difficult, so—go right ahead with your

*(Continued on page 48)*

**It flew for 15 min. 53 sec.—a national record**



# GRUMMAN F4F-4 WILDCAT NAVY FIGHTER



# WILDCAT WARRIOR

Fighters like this Grumman Wildcat destroyed 16 Jap bombers in a single battle in the Pacific.



**The plane on the cover**

DAWN coralled the Eastern sky, its fiery tenacles lashing the night across the heavens. Two cruisers rolled SE by E, heavy eight-inch guns moistened by spray from the prancing bows. Abeam raced two destroyers, grim, grey watchdogs darting in and out of the great mid-Pacific swells. Off to the East rolled the huge carrier, she too comforted by another pair of greyhounds. And above all this mighty entourage flew the stars-and-stripes, the U.S. Navy in action!

Deep within her vitals the carrier's eaglets gathered, heavy jackets open at the throat, clean white scarfs tossed carelessly about their necks. Some smoked, some smiled, most were grim. Crowded into the briefing room, the pilots sat or stood—expectantly.

"Molly!" someone snapped.

"Aye, sir!" the men responded, almost in unison.

"You're sure of that shift-over when the echelon breaks?" the officer asked, almost as a statement.

"Quite sure, sir." "Molly" answered.

"Very good!" the officer snapped and then: "All right, men, let's not waste time."

The pilots hushed suddenly, grey, blue and brown eyes focused front and center. Cigarettes ground under heels, chairs dropped from two legs onto four and muscles rippled to tenseness.

"It should be fairly simple," the officer began. "We'll get into the air as soon as a land-fall is made. The TB's will follow so don't waste any time on deck. McKenna will radio for you and Youngston will lead section three in Whorton's absence. Now remember, hold your altitude whatever happens and use only short bursts. And above all, KEEP YOUR EYES OPEN! We hope to surprise 'em, but we can't depend on it. This isn't routine maneuvers and any mistake is liable to be your last. All right, Eldridge."

The officer nodded to another man and the latter stepped forward, straightening a sheaf of papers.

"Namou Island is about 25 miles long and about 18 miles wide, making it appear roughly square from the air. There is a sharp cut on the Northern side forming a natural harbor, heavily fortified. The cruisers will open up first and we can expect heavy return firing. We are confident that there are at least two dozen enemy planes at the base about four miles West of the harbor, probably bombers. Your mission is to protect the TB's as well as the cruisers from enemy attacks. Section One will ride high as a cover, Section Two will accompany the TB's about two thousand feet above and astern. Section three will stand by cruising not less than five miles further astern to act as a cover for the cruisers. Radio will be permitted throughout after the attack begins but there must be no signals until the cruisers have opened fire. Wind, 12 knots SSE by East, so don't attempt to dive towards the island. Make all enemy approaches away from the harbor."

The first officer stepped forward. "That's it, men. Any questions?"

A pilot coughed, another lit a cigarette. Most of them seemed to be staring at the floor. One's jaw tightened.

"Then lay aloft and may God be with you!"

The pilots filed out, securing their jackets, feeling in pockets for goggles, wrapped their scarfs tight. Out on deck the sonorous chant of warming engines danced towards them. Light fog swirled about their feet as they stretched up to the handgrips legged to the wing and dropped into their cockpits. An engine screamed to life then seemed to die; another followed out into the fog; then a third, a fourth. The VF-4 was airborne headed for the rendezvous.

The next half-hour seemed a nightmare.

The cruisers snorted flame, the TB's scooted out of a fogbank and nosed towards the island. VF-4 necked down after them, followed them over the harbor, then turned with them to sea. Machine-guns barked out in the fog and the fighters nosed down. The mist cleared and bright red circles on dive-bombers centered in their gunsights. Down, down, down the fighters raced, then fingers on trips, guns stuttering out a stream of flaming death and the Jap planes disintegrated shunting their slant-eyed pilots into the sea.

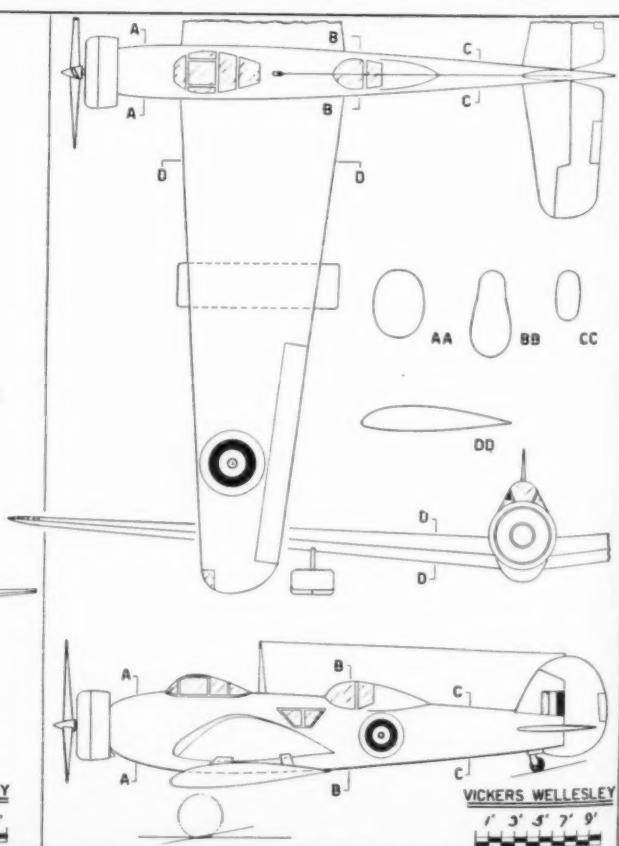
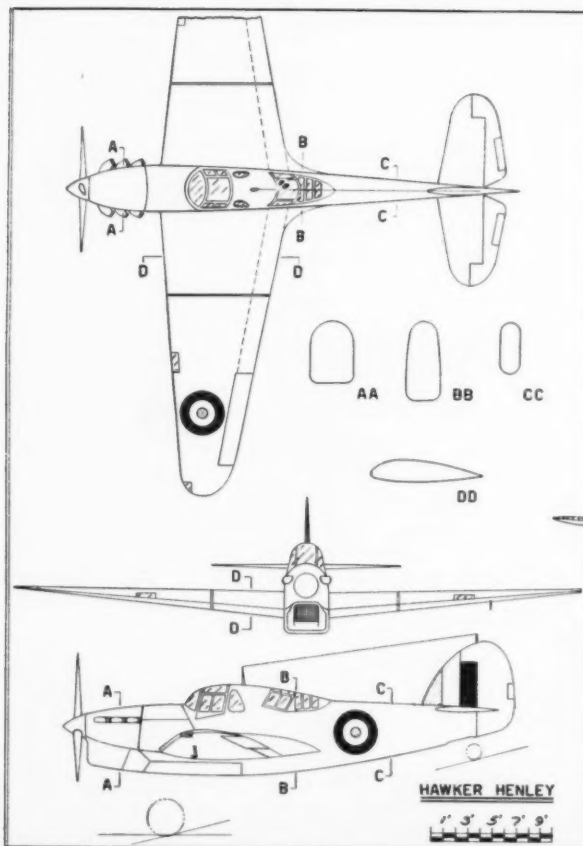
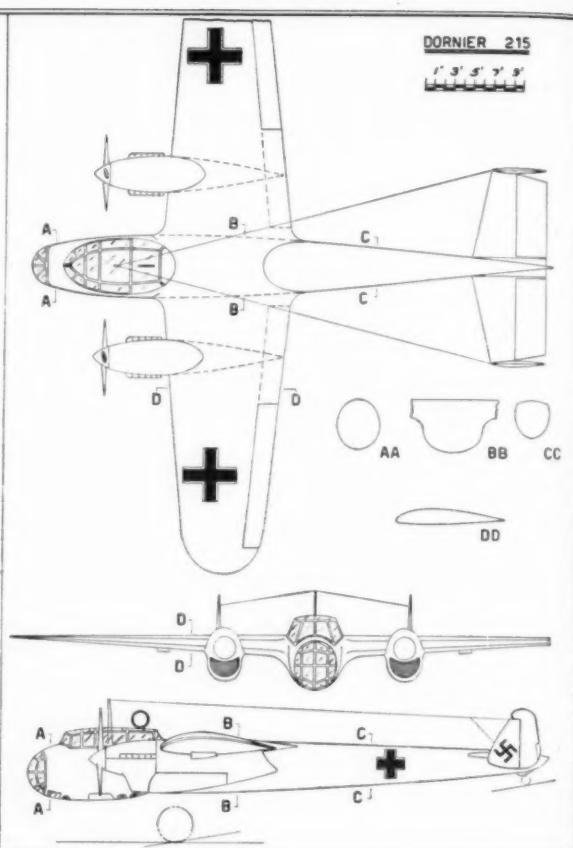
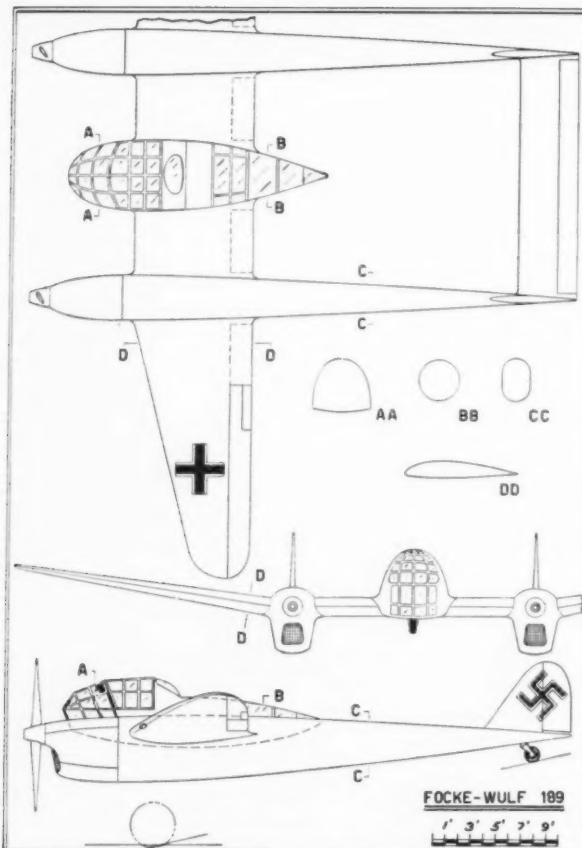
The fog whirled and tore in ragged streamers from the fighters' sleek wings as their noses pitched first on this target, then that . . . like wildcats, they were. And wildcats they are: Grumman "Wildcats," in the thick of action, battling the Jap on his own front porch, the Marshall Islands! After the smoke of battle had cleared away, after the fog had drifted to the North, after the last Wildcat had snubbed against the deck cord the United States Navy had scored its first victory of the War in the Pacific. And those Wildcats had made it possible, had cut notches in their noses, had zoomed into our pages this month: the Grumman F4F Wildcat Fighter, our Plane on the Cover.

Several different models of the Wildcat are now seeing service throughout the world but in principal use is the F4F-4 Navy model and the G-36A operated widely by the Royal Air Force.

The ship is a single-seat monoplane fighter-type featuring a fully retractable landing gear folding into the fuselage under the mid-wing giving that stubby fuselage outline.

Fuselage is of almost circular cross-section tapering to a flat oval near the rudder post and is built up on a series of channel-section bulkheads and frames, extruded section longitudinal stiffeners, covered with flush riveted "Alclad" skin

(Continued on page 51)



THESE PLANS MAY BE ENLARGED TO ANY SIZE BY PHOTOSTATING



# THE G. E. "CABINETTE" TAKES WING

A little class A gas job with A big performance—Easy to build and fly

by FRANK EHLING

WITH a short hop and a bound—this little ship is in the air, standing on its tail climbing skyward. A few seconds later it is a speck in the sky. Be careful to time the motor for less than twenty seconds or you will spend more time looking for the ship than it takes to build a new one.

After many fine flights on a recent trip to the flying field, the timer stuck and allowed the motor to run about twenty seconds. The plane kept climbing till it no longer could be seen, so we went home, sorry that we made that flight but gratified to know how easily this little ship can place among contest winners.

One week later a car drove up and out came a young man with the lost model, the only damage, a small hole in the wing covering. When offered compensation for returning the ship he replied, "All I want is to see that ship perform."

Soon the wing was patched and we started for the flying field. This fellow had never seen a gas model fly and he stood breathless when the ship took off into a steep climb. After a few flights he was a confirmed model fan, and wanted to build a plane like it. A recent letter from him tells that he was successful—his plane has made many fine flights.

This model fulfills the need of a realistic looking plane that will give a good account of itself when flown in any kind of weather.

The wing is raised on a high cabin for stability. The cut-out in its leading edge allows the wing to be placed nearer the propeller, thus giving the ship a shorter nose moment arm and added stability.

The plans are shown half size. Any measurement not given can be determined by merely doubling the size shown. The whole plan should be drawn up first; this is easily done with a pair of dividers and ruler. If you prefer, the plans can be enlarged for a class B ship. One of this size has been built and is constantly turning in good flights.

Start the construction by assembling the fuselage sides. The longerons and struts are pinned in place over the full size drawing, placing the pins on both sides of the members but not through them. After the joints are cemented and dry remove the side assembly from the plan. Make both sides in a similar manner.

Assemble the two sides by cementing the firewall and the stern post in place; the latter is the rearmost upright member of the fuselage shown on the plans. Hold the joints together with pins while they dry. Next the cross members, top and bottom, can be put in place; also the cabin structure which is built up with formers and a keel that runs from its rear to the front of the fin. While the glue of the joints is drying make sure the

(Continued on page 40)



No larger than some rubber powered models and of simple construction but with the looks and zip of large planes



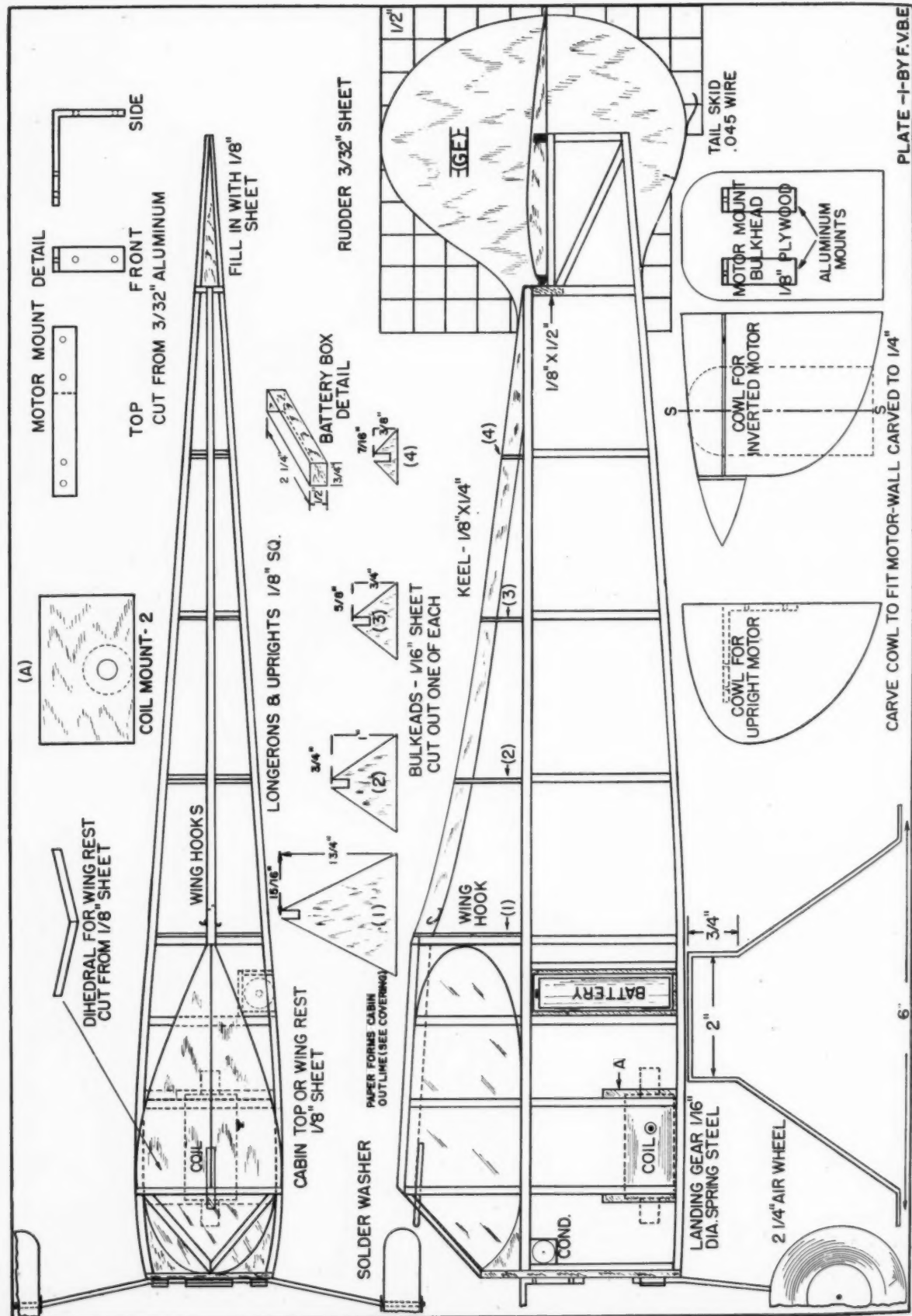
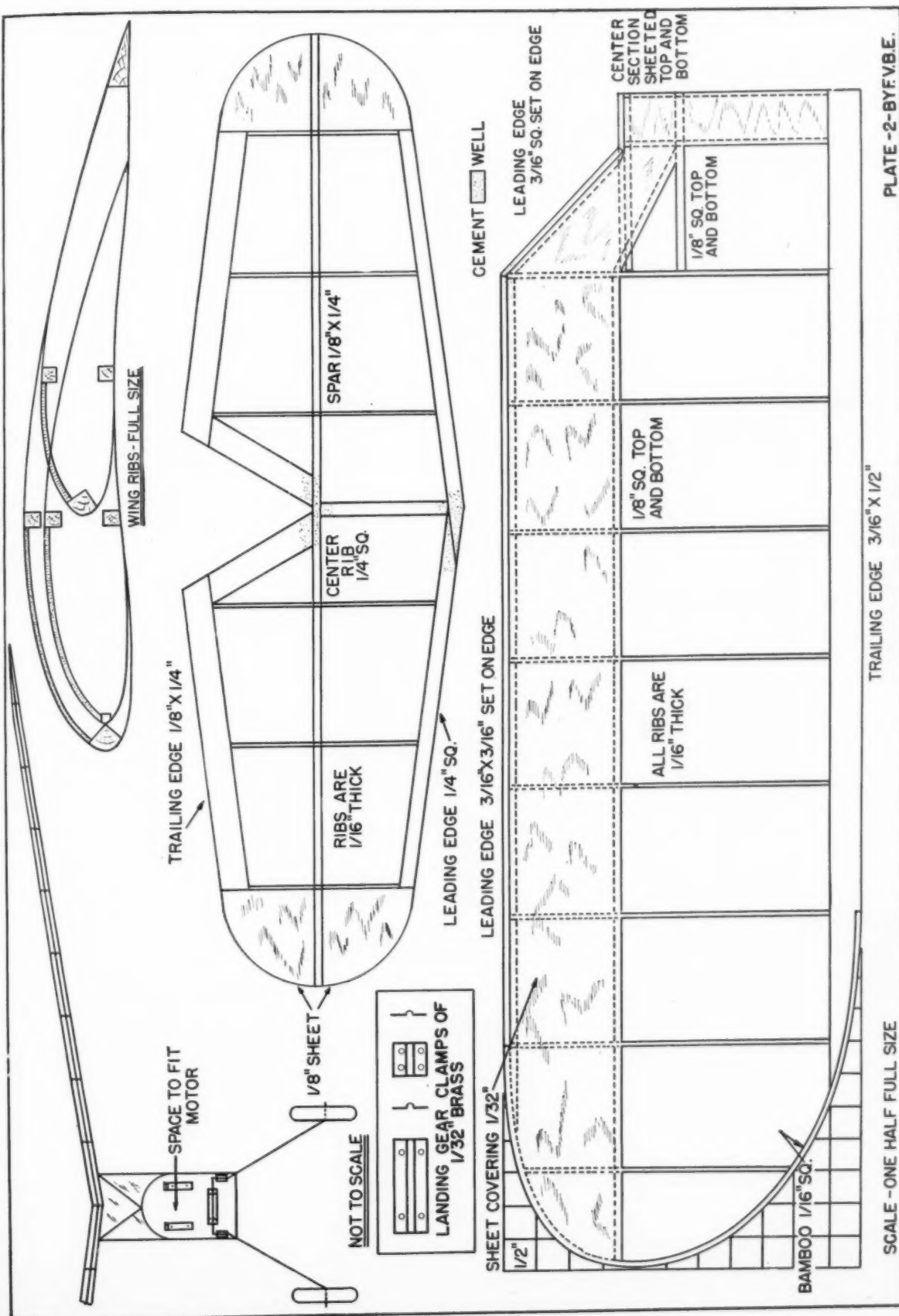


PLATE -1-BYF.VBE





**News of models, builders  
and activities from all  
parts of the world**

1. Jim Walker guides his tethered gas job by a remote control



2. (Left) Irish air keeps aloft this semi-scale model by Jim Wade. 3. (Right) The slotted wing gives stability though stabilizer is small and fuselage short



4. (Left) A "snappy" Curtiss O52; dress snaps hold the wings in place. 5. (Right) This scale Rearwin Speedster gas job is a most consistent flier. 6. (Below) A model Cub in detail by Manning Goldense



**THIS** month we take great pleasure in announcing the formation of the Model Airplane Engineers, an association of model builders with a definite purpose.

Its objective is to encourage and participate in model aviation as a sport and as a medium of aeronautic instruction. Especially will it encourage experimentation and an unlimited field of design through broad contest rules.

The whole value of model aviation has been initiated and built up through the possibility of experimentation it affords; many new developments began with a few simple experiments with model planes, and it is this joy of exploring science that contributes to the life and spirit of model aeronautics. It is a spark from which all model activities spring and which animated our early pioneers in their struggle to develop full scale aircraft.

The first objective of this organization therefore will be to keep this spark alive. Particularly should it be of interest to all modelers who wish to participate in model designing, building and flying from a standpoint of sport and science, using it as a means to increase their health and knowledge, thus contributing to their future aviation careers.

A column with news, pictures, comments and other interesting material pertaining particularly to this organization will appear each month in *Air Ways*.

Anyone who is seriously interested in model aviation may become a member. To enroll fill in the coupon or send a properly filled-in facsimile of it to this office: MODEL AIRPLANE NEWS, 551 Fifth Avenue, New York City. From time to time lists of new members will be printed. As the organization grows, units may be formed in the various communities and steps will be taken to elect national officers with dates set aside for regular conferences and meetings. Let us make this a strong, closely-knit organization. Those who remember the IGMMA will recall what its 5000 members contributed to the development of gas model aviation. This organization can contribute even more and is dedicated in fact to do so. If you wish to see model aviation grow, if you wish to prevent restrictions of all kinds being placed upon it, enroll now.

Next month more interesting and vital facts will be presented concerning the development of the association.

In the April issue of *MODEL AIRPLANE*

7. Smallest airplane ever built; a 1 15/16" Fokker D-7 in detail





News we called readers' attention to the fact that model activities were endangered by lack of available building material; the situation is becoming extremely threatening for the whole game, and we requested readers to write directly to the President and acquaint him with the facts, namely: 1. How model aviation has proved invaluable in instructing young men in the basic principles of aeronautics—and that hundreds of young men who had received their training in designing, building and flying models now were contributing invaluable assistance to the defense effort because of this training. 2. That priorities and restrictions on building materials were curtailing model activities and this training which has helped to place American aviation in such a high position.

We have received a number of extremely interesting letters from modelers who have responded to the call and written President Roosevelt. So we take pleasure in printing one or two of them.

First we hear from a "mother and son team": June and Jack Dyer of 316 Monterey Street, Brisbane, Calif. The Dyers are members of the East Bay Aeronauts Association.

"Dear Sir:

"Regarding your vital message under Air Ways of the April issue, my son and I want to praise you for trying to make the model builder realize we have a *fight*, not for our own pleasure, but for the sake of aviation and the future of our country. I *know* what model building means, and the *progress* to aviation that is to be gained through model building. Jack and I try to make all our acquaintances familiar with the importance of gas models. *We wrote the President at once.*

"*We need encouragement and publicity, not discouragement.* Some of these precision model builders will hit upon something sensational that will out-fly anything now in use, if given the opportunity. The new proposed A.M.A. rules by Mr. Angus is not the answer; we must fight for what we know is *right*, though the majority I am afraid are not going to be far-sighted enough to see this. We must awaken them. That is why I was so enthused over your article and am going to do all in my power to get everyone of the *East Bay Aeronauts* to write the President.

(Continued on next page)

8. Bill Steese with his winning Westerner of unique design



9. Don't let this fool you; it's a model not a full size Grumman F3F-2, built by Jon Hauser



10. Here's a tricky design with many angles, by Bob Hildebrandt



11. (Left) Denny Davis with his winning plane. 12. (Right) Model building and flying has proved a boon to bed-ridden David Mellish. 13. (Below) A little snow doesn't stop the Greeley gas modelers from flying



## Air Ways

(Continued from page 23)

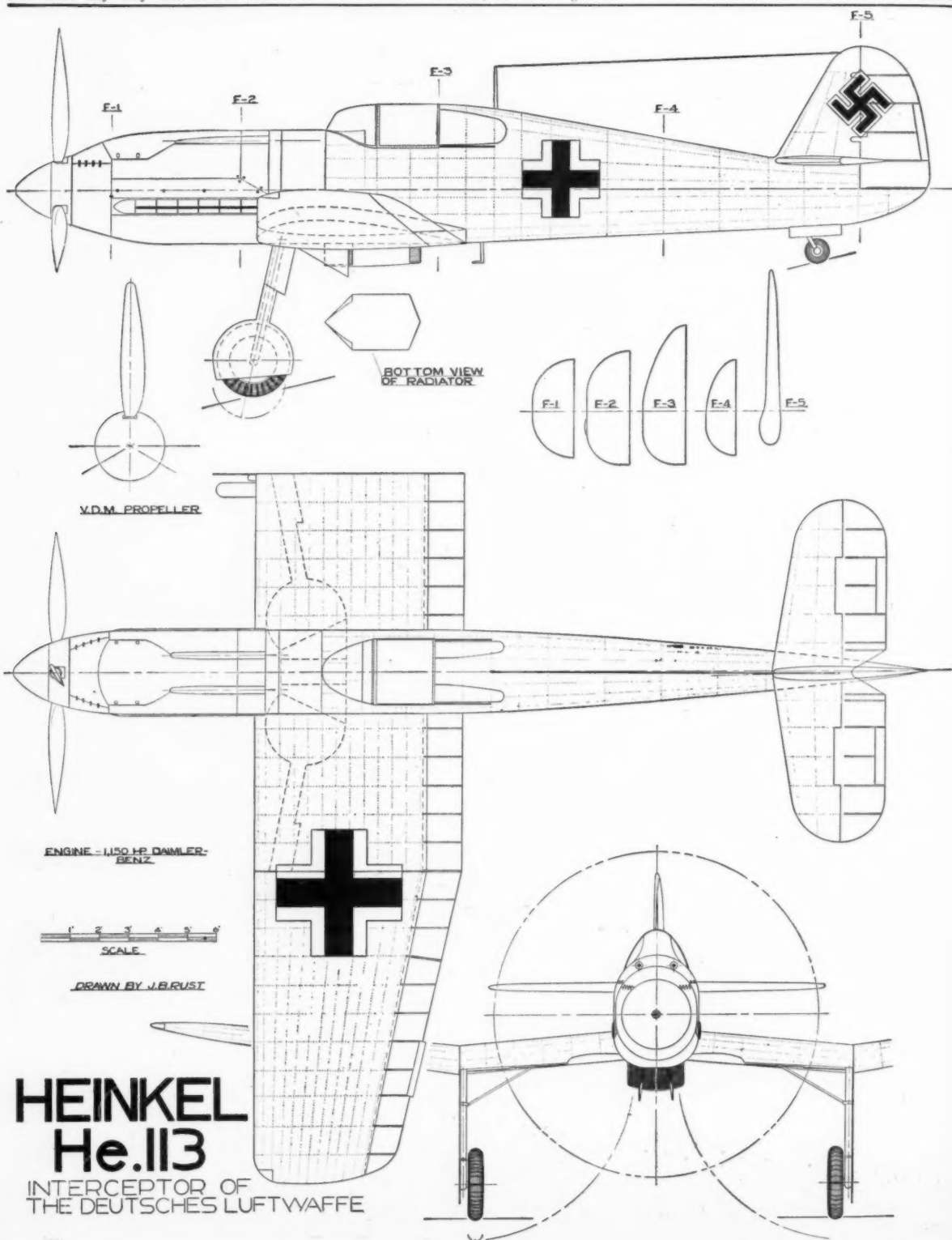
"We of the East Bay Aeroneers Assn. are badly in need of good fields from which to fly, and the cooperation of the public to allow it. They should be made to realize that some day they will benefit from the

tireless efforts of the model builder. It would be a dreadful mistake to ground gas models as everyone seems to think is coming—I do not want to accept the thought—we must fight for recognition until the Public, President, Government, Army and Navy are conscious of the model builder and his achievements, which are *great!*

"Due to constant and long illnesses, model building is everything to Jack; he *lives* it; he started me building with him. If parents would be more understanding and build a model or two, it would help considerably.

**"WE MUST HAVE MODEL BUILDERS TO KEEP 'EM FLYING!"**

Here is another letter: from Mr. Harry



**HEINKEL  
He.113**

INTERCEPTOR OF  
THE DEUTSCHES LUFTWAFFE

C. Copeland, director of the Syracuse Model Airplane Club, Syracuse, N.Y.:

"Dear Mr. President:

"I write you on behalf of the air-minded youngsters—members of our club, who are deeply concerned over the possibility that the supply of materials necessary to build

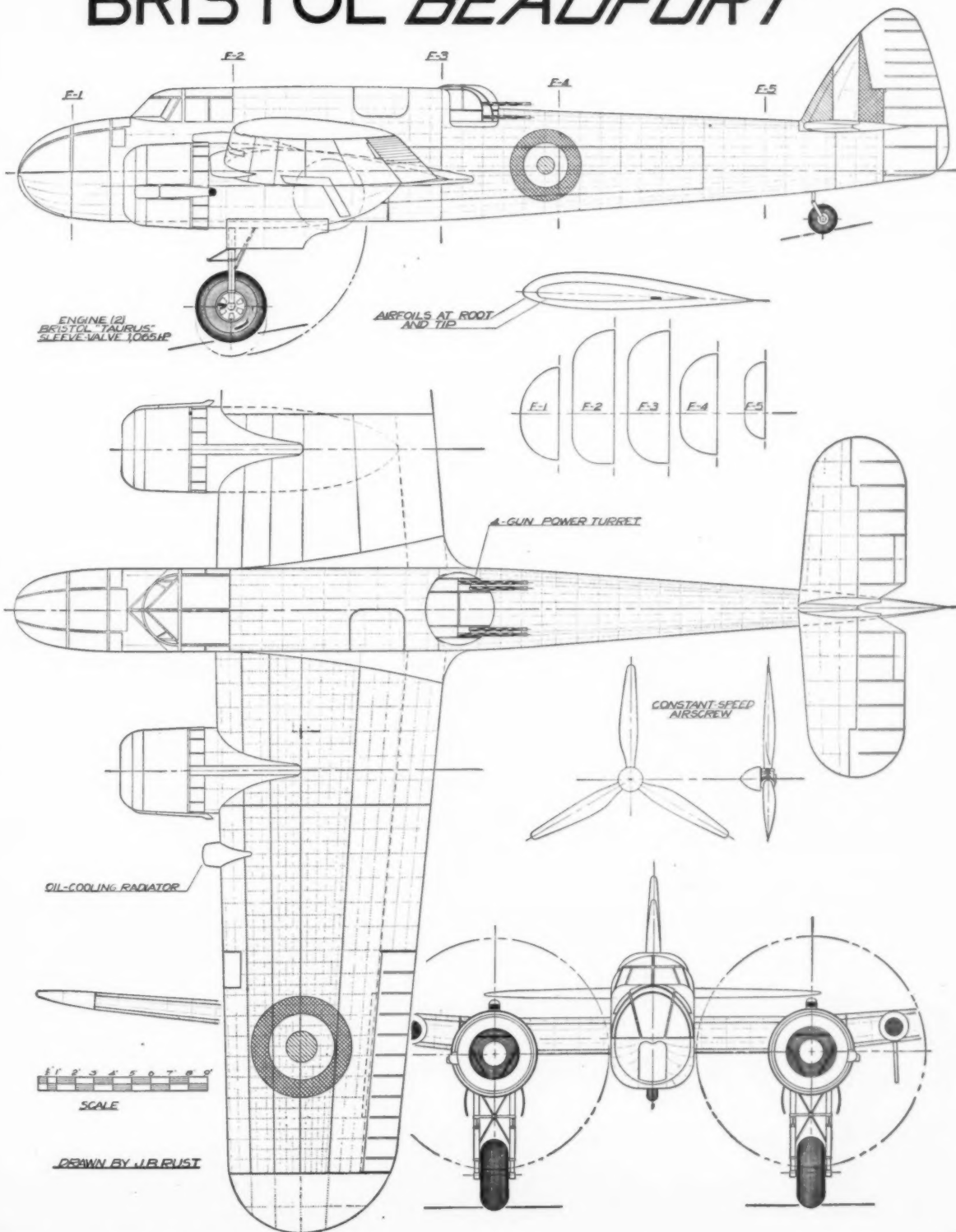
model airplanes may be cut off.

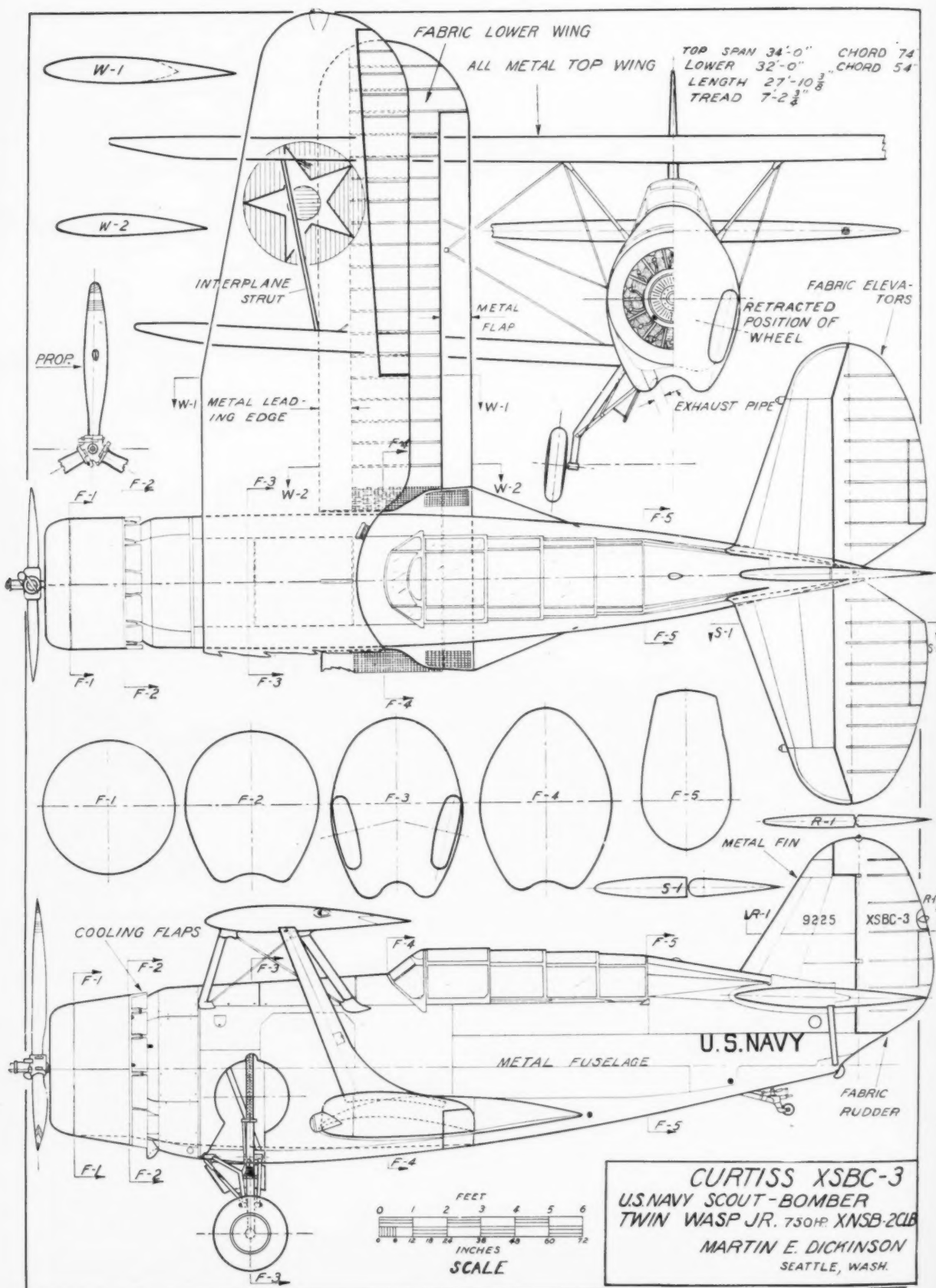
"It seems inconceivable to me that any restrictions on the insignificant amount of materials necessary for model airplane building should even be considered since the aviation knowledge our air-minded youth has obtained through this activity has in

countless instances proved to be of definite value to our defense and war effort.

"I say this from personal knowledge. My activities in encouraging model building dates back to 1933, and during this period my boys have gone forth from school into  
(Continued on page 56)

## BRISTOL 'BEAUFORT'







# RIGHT OFF THE FLIGHT DECK

Build and fly this thrilling miniature of Britain's most famous "carrier" fighter—the Blackburn Skua

by  
**EARL STAHL**

THE Blackburn Skua, two-seater fighter and dive-bomber, one of the most widely used weapons of Britain's powerful Fleet Air Arm, is designed to meet the exacting demands of aircraft carrier planes. Because of its deadly striking power, wide range and fine performance, it is considered a most formidable fighter.

Structurally a low-wing monoplane of all metal construction, the Skua is similar in many respects (except beauty of line)

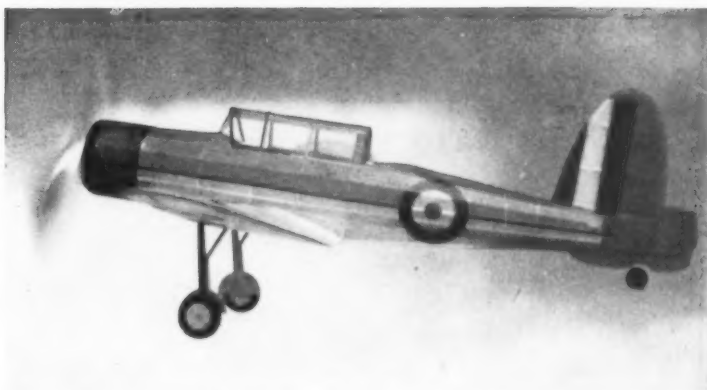
to the Vought Vindicator scout-bomber of our own navy. Like the Vindicator, wings fold to conserve deck space yet they are strong enough to take the stress of screaming dive-bombing attacks and sharp pull-outs once the explosives are released. Flaps at the wing trailing edge reduce diving speed and for slow approach upon boarding. An arresting hook lowered from the fuselage belly stops the craft on deck. The plane is divided into a number of water-tight compartments to keep it afloat in the event of emergency landing. A very complete set of aviation equipment makes possible long over-water flights.

Offensively and defensively the Skua is a powerful foe. In special racks beneath

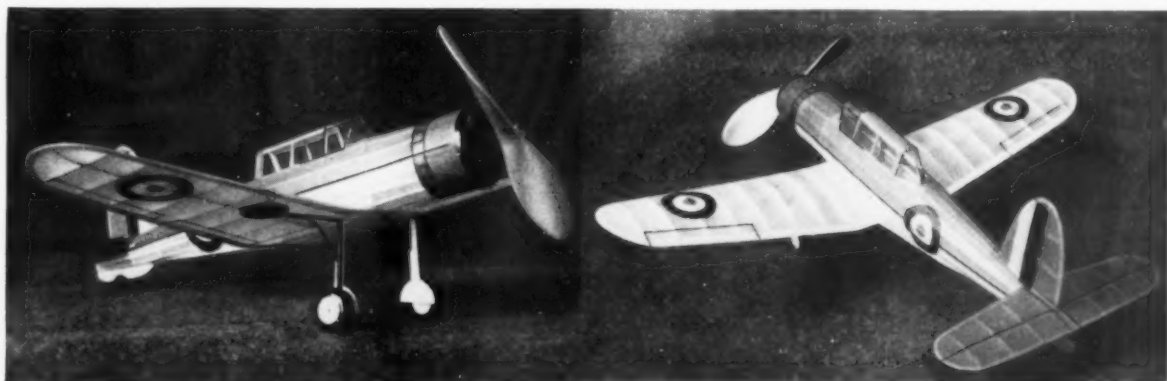
the wings nearly a half ton of bombs of varying sizes and types can be carried. Four forward firing machine guns jut from the wing leading edge and the observer's cockpit is equipped with two free-firing Brownings. The engine is Britain's famous air-cooled, sleeve valve 900 h.p. Perseus producing maximum speed of 250 m.p.h.

A modified version of the Skua is the Blackburn Roc. In most respects this plane is similar except that it is fitted with one of those deadly, power driven, multi-gun turrets. The enemy is blasted from the sky by flying along side and delivering a terrific broadside.

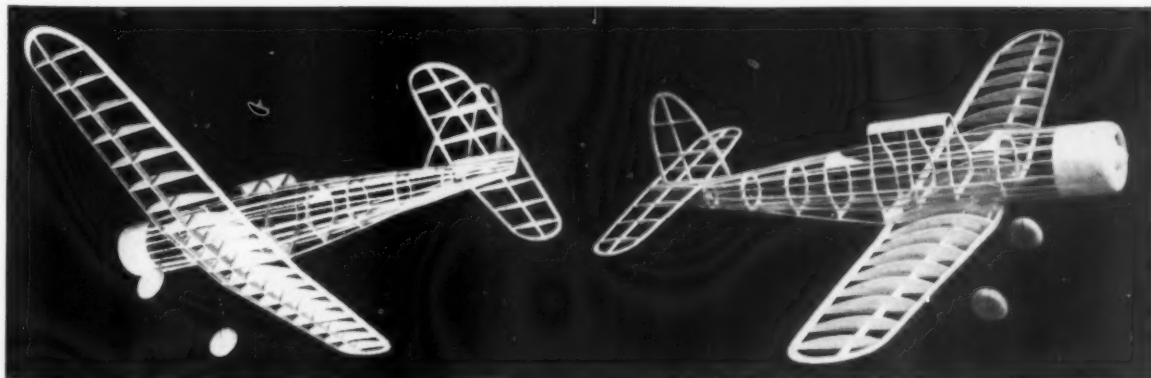
Despite its rather unusual appearance,  
(Continued on page 40)

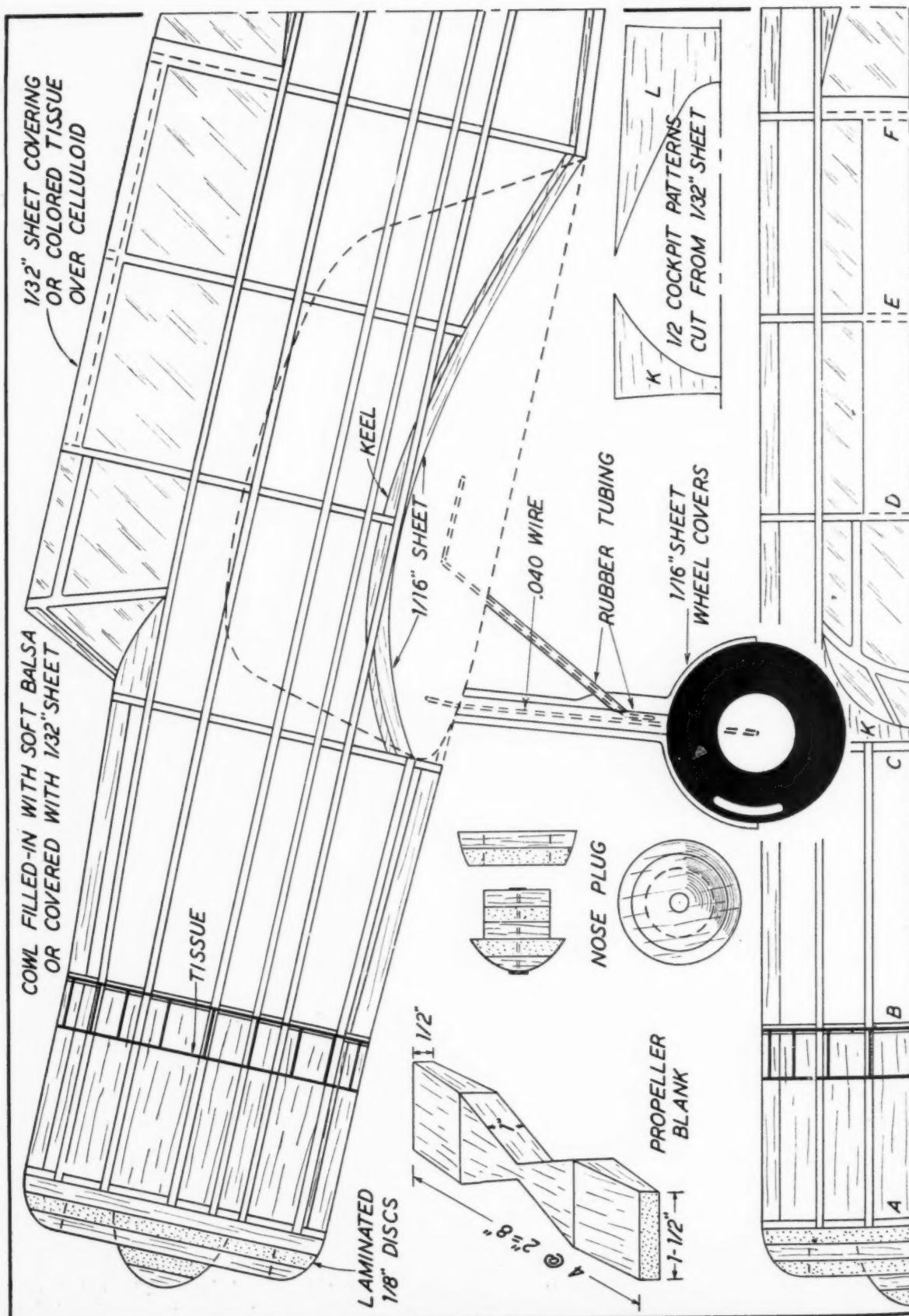


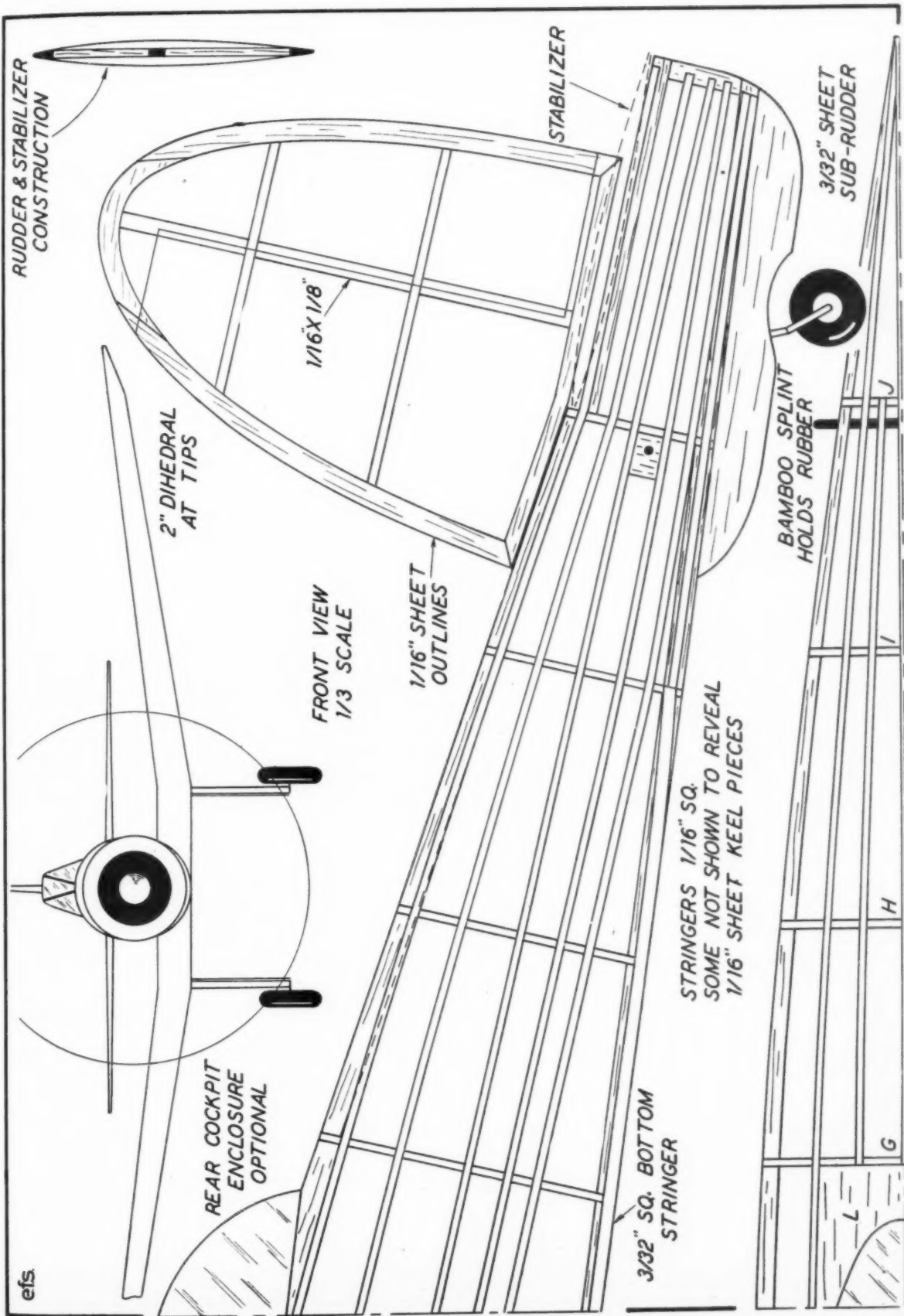
Model in actual flight, not posed

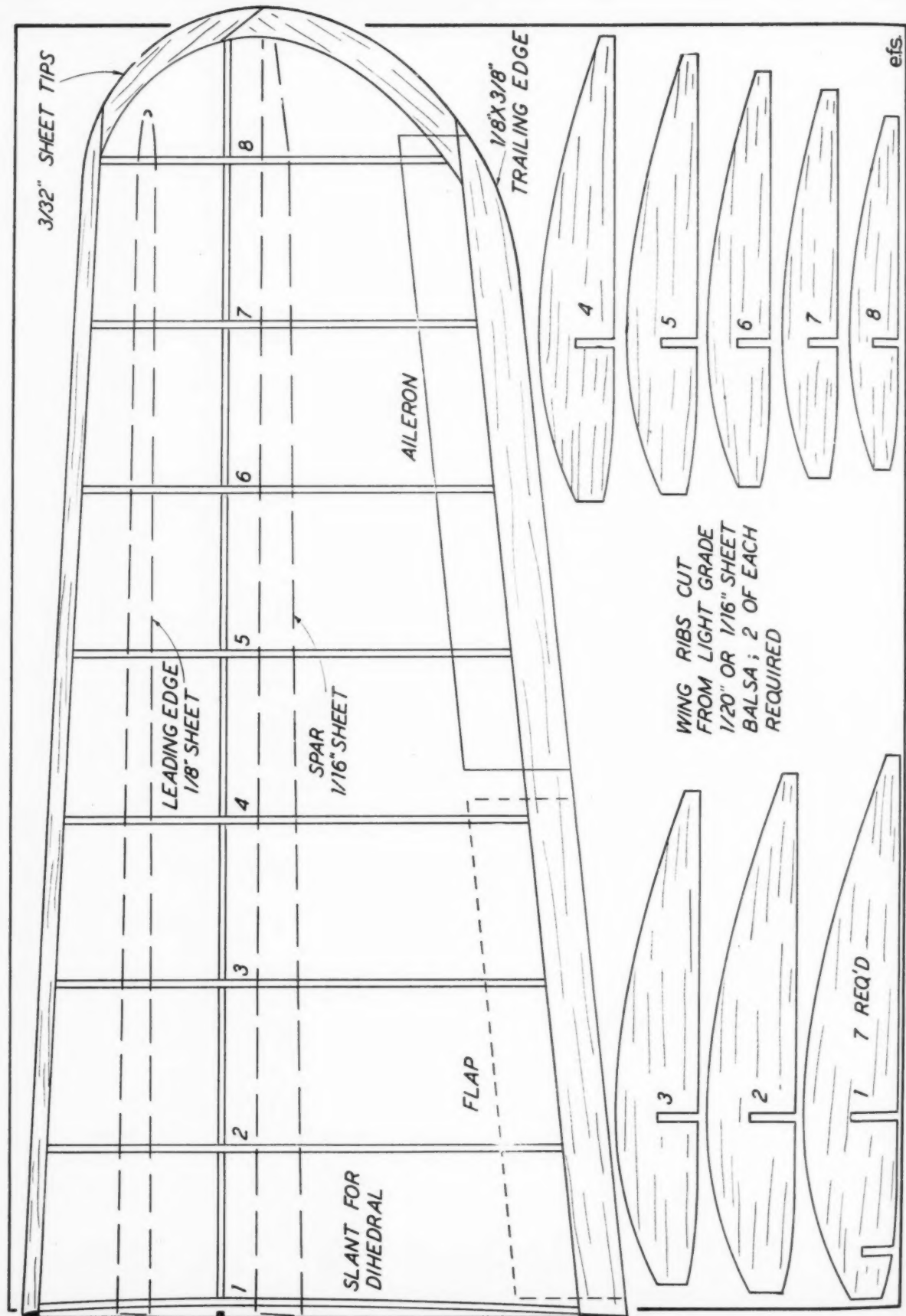


Built in careful detail, it is most realistic and thrilling in flight. The light yet strong and efficient structure is clearly evident

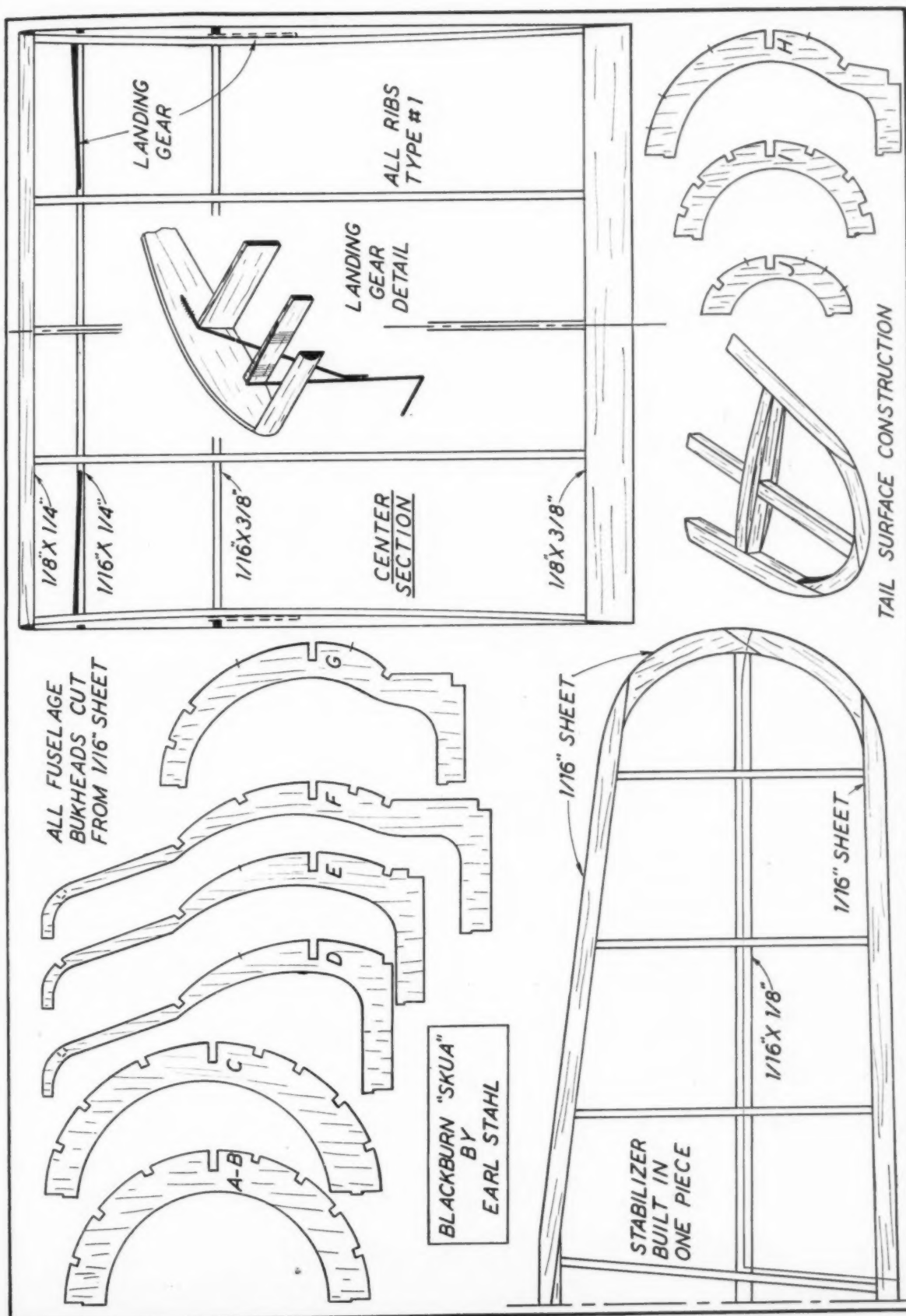












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U. S. Army Pursuit

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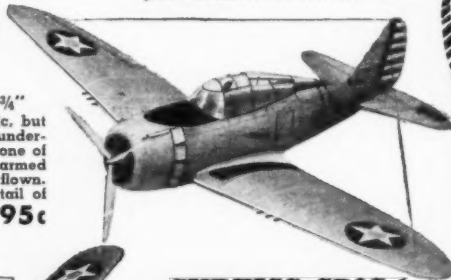
Here's the plane that's making history in the skies over Burma, Africa and the Pacific. Called "Tomahawk" and "Kittyhawk" by the British. Deadly in swiftess, maneuverability and firing power, it has downed more Jap aircraft than any other American plane. Complete kit, postpaid or at **95c** your dealer.

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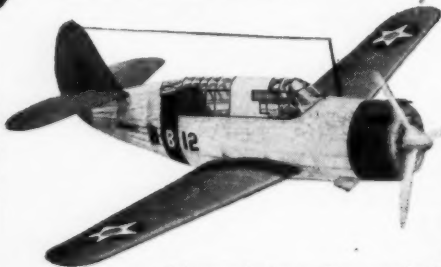


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U. S. Navy Dive Bomber

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The SB2C-1, U.S. Navy Dive-Bomber, strikes harder, flies faster, and ranges farther than any airplane of its type in use today. Performance figures are still on the secret list, but rumor has it that its speed is 100 m.p.h. faster than any other dive bomber in existence. Complete kit, postpaid or at your **95c** dealer.



Ask your dealer to show you the Brewster "340", also a member of our Defense Series. Complete kit **95c**

Yes, you model builders of today will be pilots of tomorrow. The fundamentals of learning through the construction of your model airplane is the educational basis for your future career. The responsibility for the superiority of America's young model builders is on you. Thousands of young model builders are gaining experience, by occupying important positions in the field of aviation. Keep up your good work! Keep 'em flying tomorrow!

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25" WINGSPAN

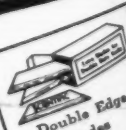
Why was she called a skyscraper? In her trial flights this model consistently made altitude flights of over 500 feet. Her color design makes her a classy looker, too—fuselage, brown and white, trim. The twin rudders assure greater spiral stability. Complete kit, postpaid or at your dealer **30c**

### New No. 1 Scientific GLIDER



NEW! Wing tapered! Rudder, stabilizer and fuselage cut to shape!

A glider that is easy to construct... and when completed, a glider that is the most beautiful on the market! When you fly it—Boyl—no use talkin' Words weren't made for flights like this! And the complete kit, postpaid or at your dealer, is only **25c**  
WINGSPAN 20 3/4" — LENGTH 18"



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## WIZARD

WINGSPAN 25" LENGTH 16"



After you build and fly this model, you'll understand why it was so named. It hops off the ground so quickly you'll be amazed at the consistently long flights it turns in. Detachable wing uses the rubber to dowel combination which prevents broken spars and allows easy flight adjustment. Strikingly finished in red and white with black stripes on fuselage. Complete kit, postpaid 30¢ or your dealer

## PARACHUTE PLANE



... with automatic trap door release!  
WINGSPAN 40" LENGTH 28"  
Imagine! After climbing 300 feet or more, out drops a pilot with his parachute—automatically! It's a trim endurance model, too—and will easily make flights of a mile or more! Complete kit, postpaid or at your dealer \$1.50

## BULLET

A pursuit type plane with a low, streamlined, tapered wing; movable tabs on tail surfaces; single strut landing gear; easily constructed enclosed cabin (including instrument panel). The kit is 100% complete and contains all high quality parts. Included are: machine cut propeller, turned wheels, tissue (3 colors), and full size plans with instructions. Complete kit, postpaid or at your dealer 60¢

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LENGTH 23"

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DOUBLE  
DUTY  
KNIFE  
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The most practical  
knife ever developed  
for model building  
and all other crafts.

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- Wingspan 78"
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# ACADEMY OF MODEL AERONAUTICS

(A Division of the National Aeronautic Association)

## Official Model Airplane News

### N.A.C.A. Employment for Girl Modelers

**F**EMININE model aircraft makers are wanted by the National Advisory Committee for Aeronautics. The Civil Service Commission has asked the Academy of Model Aeronautics to announce that N.A.C.A. will immediately hire girls between the ages of 16 and 25 who are experienced modelplane builders and fliers to work at the Government's aviation laboratories at Langley Field, Va. Their work will be vital to the war effort; will consist of specialized duties, including work on aircraft instruments and balancing and testing of airplane models in the N.A.C.A. wind tunnels. Starting salary is \$1,260 a year with full opportunities for advancement. Applicants who qualify will be hired immediately, pending the establishment of a Civil Service register.

Qualified girl aeromodelers should write to William R. Howell, Special Representative, Civil Service Board, Fort Monroe, Va. Ask for application No. 4-691 which Mr. Howell will send together with other additional information that is desired.

### Aviation Education in The Schools

Plans for immediate installation of junior aviation courses in public and private schools throughout the country was the keynote of the First Air Youth Aviation Education Conference called by N.A.A. in Washington on March 16. Ground work also was laid for setting up educational courses for N.A.A.'s Junior Air Reserve, patterned after ground school work given Army and Navy pilots.

An outgrowth of N.A.A.'s conference will be a series of meetings between aviation officials and educators in all parts of the country. N.A.A. President Gill Robb

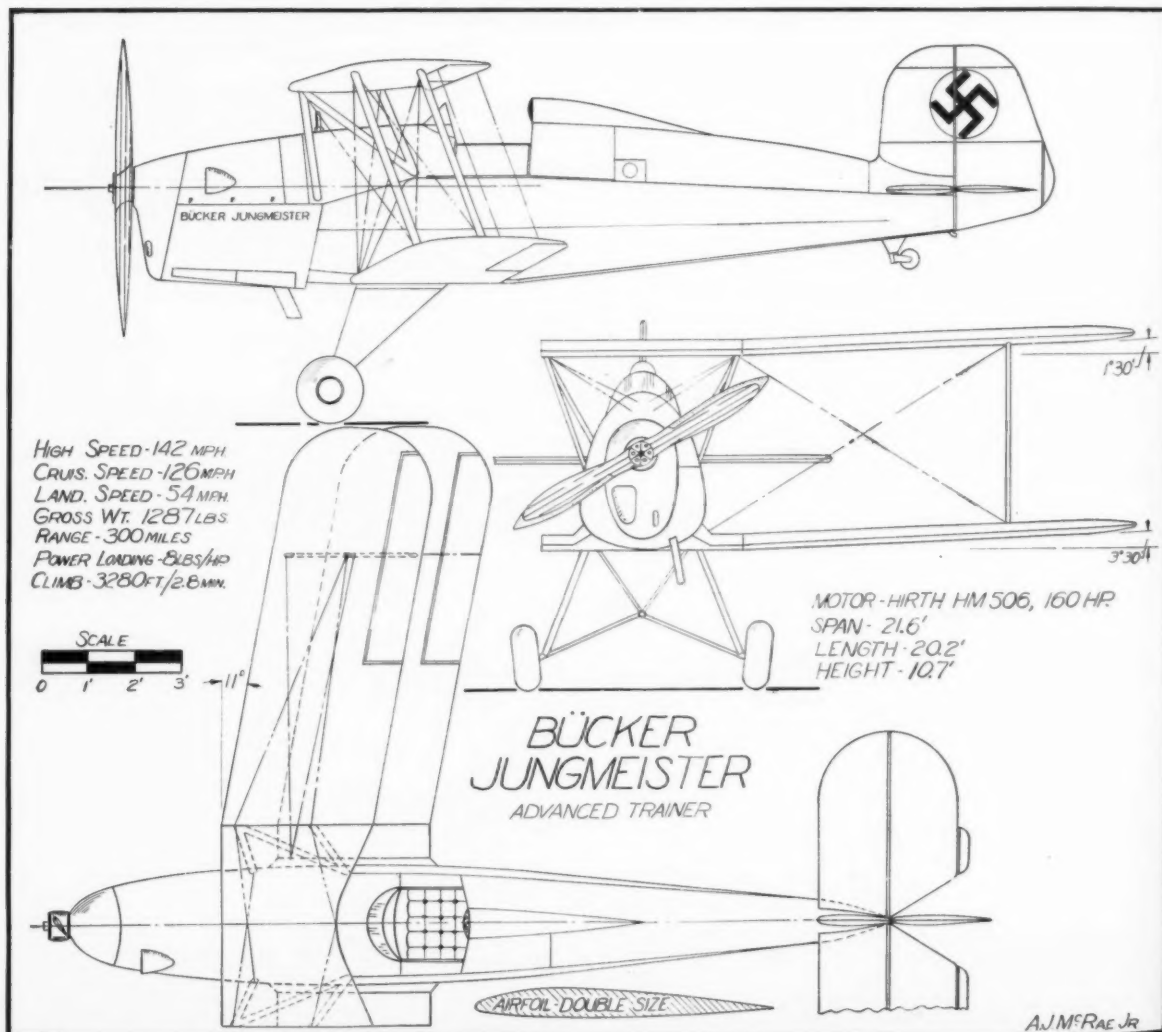
Wilson, member of the new Joint Advisory Committee on Aviation Education set up by the U.S. Office of Education and the Civil Aeronautics Administration, attended the first meeting held at Newark, N.J., March 24 and 25, with William P. Redding, N.A.A. Executive Vice President. Both officials declared that N.A.A. would continue to lead the way in promoting aviation education.

Dr. Dean R. Brimhall and Bruce Uthus of C.A.A. and Drs. Robert W. Hambrook and Maris Proffitt of the Office of Education told of the purposes and functions of the advisory committee at the N.A.A. Youth Conference as well as advising on the J.A.R. program.

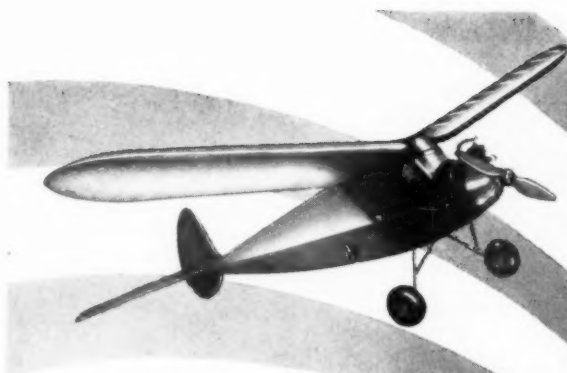
### Canada Cadet League Activities Told—

Highlight of the session was a report presented by Bruce Keith, Public Rela-

(Continued on page 42)







### Gull-Wing SPOOK—Class A or B

This "revolutionary" but now standard model was originally a surprise even to its designers—here at Modelcraft. It was thought that the gull-wing would increase soaring ability, but it was not foreseen how much it would stabilize both climb and glide. This is the factor you need now for "patriotic" three-minute flights. The *Spoek* is easily adjusted for flights of a specified duration, and, as evidence of stability, the test model was unmarked or undamaged after well over 200 flights.

**\$2.25**

### WESTWIND—Class B or Small Class C

The new A. M. A. recommendations—that is, no long distance flights but rather making every effort to have your model come back to its starting point—call for models that are spirally stable. Now—streamlined—compact, the *Westwind* incorporates all modern features for stable flight, including stallproof slotted wings and latest "spin-preventer" tail. Here is a "must" model for the coming contests—ready to build and fly now! Your dealer will be glad to let you examine the kit, which has everything necessary.

**\$3.85**

## "HOMING PIGEONS" for LIMITED DURATION FLIGHTS!

Get in Line with the New  
A.M.A. Recommendations  
with Modelcraft  
SPIRALLY STABLE  
Models

Complete Instructions For Adjusting Your Ship For Controlled Flight Enclosed With Each Model.



### MISS TINY—Class A

Every Miss Tiny sold means a satisfied customer for Modelcraft. As a duration flyer, its record was unsurpassed. Under the new A. M. A. recommendations, it is certain to chalk up a new string of victories. Easily adjusted for controlled flights. Wing Span 46". Kit with radial or beam motor mounts, bamboo paper covering, standard wheels.

**\$3.25**

### Priority Pak Battery Cases

Modelcraft's Priority Pak cases, made of special carton cardboard, solve your battery mounting problem and end trouble or soldering when replacing worn-out cells. A handy piece of equipment that has been welcomed by modelers everywhere! Four cell, **25c**, Two Cell, **20c** ea.

### D-G Props

Everything you expect from a prop—plus 20% to 35% better performance. The world's fastest climbing propellers! This has been proved again and again in all types of ships with all types of motors. Lay in a stock now and be protected against shortage or price increase! 8" to 14". See specification chart at your dealer's.

**30c** ea.

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*Don't miss this unusual fea-  
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MODEL AIRPLANE NEWS  
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## Your Gas Model's First Flight

(Continued from page 9)

Now raise or lower the rear end of the stick until it is parallel with the engine bed lower face. This may require a keen eye. An added check may be made by placing a right-angle draftsman's triangle with its base resting on the stick and vertical leg parallel with the vertical propeller center line. Sight along this vertical leg and raise or lower the rear end of the stick until it is parallel with the propeller center line, perpendicular to the engine shaft. When correct adjustment is found hold the stick in this position and draw a line on the fuselage side along the stick's upper edge. This will represent the thrust line figure B.

Now you are able to adjust the wing and tail for correct angle of incidence. Mark a point at the center of leading and trailing edges of the wing and stabilizer. The wing's front edge should be exactly 3-1/4" above the thrust line; the trailing edge should be 2-7/8" above it, making a difference between the two edges of 3/8" or 3 degrees angle of incidence.

To establish the stabilizer angle draw a line, X—X', parallel to the stabilizer and below it. Measure upward from this line to the trailing edge and indicate the distance; it will be approximately 1/2". Now measure upward from the line to the leading edge. This should be 3/32" more, or approximately 19/32". In any case make the difference between the two edges 3/32". Shim up or lower the front of the stabilizer as necessary; this will allow about 3/4 degree positive angle of incidence.

The wing and stabilizer angles now have been properly adjusted and thereby nine-tenths of the potential crashes have been eliminated. However, two other important adjustments must be taken care of.

First note whether or not the right and left wing angles of incidence are the same. This is done by standing 4 or 5 feet in front of the airplane in line with the propeller shaft. Then sight along the wing, noting whether the trailing edge is depressed on one side more than on the other. If the same amount of the underside of both wings may be seen, no adjustment is necessary; but if they are uneven twist the low side up and the high side down to take out the warp.

If by twisting it several times the wing cannot be straightened it will be necessary to twist the wing slightly and hold it over heat at the same time. However do not hold it too close to any flame or the doped surface may ignite. When the whole wing is thoroughly heated hold it in the desired position until it cools again. Warp may be completely eliminated by this procedure though it may have to be repeated several times to obtain correct adjustment.

The last step is to center the fin, making certain that it is exactly parallel with the fuselage longitudinal centerline; if it twists one way or the other it must be warped to the correct position.

Now you have done everything possible to ascertain that angles, weights, etc., are of the value prescribed by your design specifications, and a successful flight

should be assured provided your plane is handled properly when flown.

## Motor Adjustment

Don't become too anxious however for another step, perhaps tedious, is required before your plane can get off the ground: the motor must be tuned up by following a definite procedure. Such a course will enable you to quickly locate any trouble that might develop, by the process of elimination of possible trouble points.

For instance, first test your batteries, making sure they have their full charge. On a test flight only new batteries should be used; some batteries may appear to have sufficient charge but actually not enough to give the intense power needed for small engine ignition. Usually it is the last 10% extra power in the battery that does the work; in other words, if your batteries are only 90% charged they will not operate satisfactorily.

Second, check all of your wiring and connections; *every wire* used. Because this is usually tedious many model builders prefer to "play ostrich", sticking their heads in the proverbial sands of blissful ignorance—blissful only until they attempt to start their engine. Unquestionably it is tedious to "follow through" every wire but you will find that in the end it will save many precious moments and propeller-worn fingers.

Third, examine the breaker points, making sure they are smooth and clean. The two faces of the points should not be parallel as many suppose, but should make contact at one side. This will give the best results. Follow this by checking your spark plug, adjusting the points to the exact clearance prescribed by the engine manufacturer. Do not make the mistake of substituting your own idea concerning amount of clearance. When replacing the plug after adjustment and cleaning make certain that the copper washer commonly used between the plug and cylinder, is in place; otherwise the plug may protrude too deeply into the cylinder and the points may be bent by the rising piston.

Many builders have difficulty with the lead wire from coil to plug. The most satisfactory method of attachment is the metal "U" clip which can swivel on the plug freely under engine vibration; lead wires usually break after a few minutes of running if they are fastened rigidly to the plug.

The coil is very important. If not using one prescribed by the engine manufacturer it is suggested that you check it carefully for its capacity and strength. This may be done with detachable-engine-mount planes by test running the engine before it is inserted in the model. This will enable you to locate any trouble easily.

It is not exaggeration to say that from 30 to 40% of engine trouble develops from improper battery contacts. Cases have been known where the motor runs perfectly when demounted from the plane in the shop but when it is in the air it "cuts out" immediately. This results from the jiggling of the batteries due to insecure fastening. It is best if they are of the spring type.

Second, batteries should be held rigidly in place by rubber straps, strong enough to prevent any play whatsoever.

If you have used care in carrying out all these precautions, your engine unit should be ready for service. However before you journey to the flying field it is always wise to give the engine a short test run, especially if it is a new one, in which case we advise a run of at least an hour, not necessarily continuously however.

When test running your engine fill your tank with gas, open the needle valve, then hold one finger over the air intake and spin the prop 3 or 4 times. This sucks a charge of gas into the crankcase. Now turn the needle valve down so it is open approximately 1 1/2 to 2 1/2 turns.

You are now ready to start the engine, provided you have put the propeller properly on the shaft. This should rest vertically when it is turned to the point where compression begins. To start your engine turn on the ignition, holding the plane steady with your left hand and spinning the prop with your right.

It is impossible to describe how anyone should spin the propeller; each modeler must develop his own technique which will only come from experience. Enough impulse should be given the blade by turning it once or twice. If you are lucky a few promising explosions will occur. Keep it up until the motor starts.

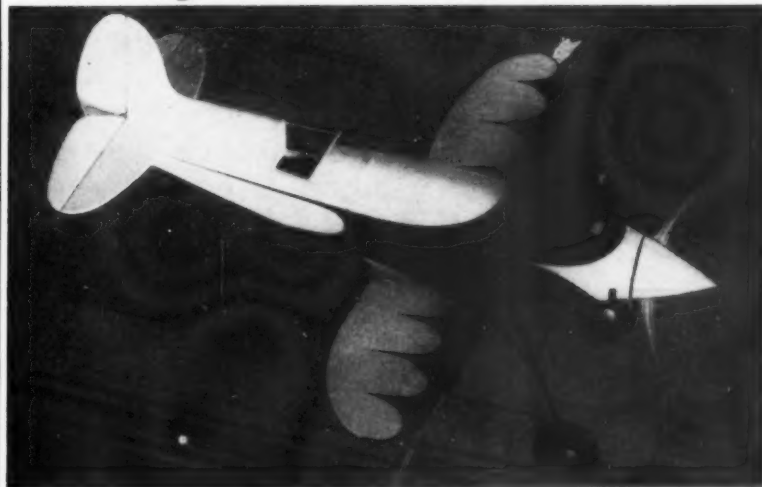
If the explosions come in 4 cycles instead of 2 gradually turn down the needle valve, using care, until the point is reached where the motor starts to fire in 2 cycles. You will recognize this readily, for motor speed more than doubles, the break occurring at one particular point of adjustment. The needle valve is in adjustment at this point of break. Do not turn it down further, for here the motor will run "rich" when the tank is full but as the flight progresses the mixture will grow "lean". Consequently if turned down too far and the mixture is comparatively lean at the beginning of the flight it is liable to grow too lean and cut out after a few seconds of running.

Now the big moment has arrived—you are ready to fly your model and see whether or not your patience and hours of work will "bear fruit". However do not be carried away in the excitement and handle your model carelessly on the journey to the field; a car door or a back seat can jam a wing and spoil a good day!

Upon arriving at the field you are "ready for business", provided you have not forgotten your little tool-kit containing fuel, extra batteries, pliers and other sundry items which will be necessary; even dope, paper and balsa wood sheet may be needed to patch a wing or fuselage after one or two flights. Then again, an extra propeller or two may come in handy; these unfortunately are often broken on bad landings, especially if care has not been taken to see that the propeller comes to rest in an approximately horizontal position when the engine cuts out. If it comes to rest vertically, loosen the propeller nut and turn the upper blade slightly to the left; then in a bad landing the lower blade will not strike the ground.

The first procedure in flying is to select a field with long grass to windward. Be sure to start your motor gently, gliding the model from your hand to test for correct flight balance. The long grass pro-

## SUPER "G" LINE FLYING ENTIRELY NEW & DIFFERENT



IT'S HERE, A Sensational New Directional Control System, SUPER "G" LINE FLYING and a Sensational New Elevator Type Control Model, The SUPER "G" SHARK, illustrated above. Especially designed for Super Speed and Stunt Flying, this Mighty Shark roars through space at speeds of over 100 M.P.H. Yet, so simple in construction and operation that even the beginner will experience no trouble. May be powered with any class "C" motor, such as the Ohlsson '60's," the Tiger Aero, the Super Cyclone, etc.

The New Super "G" Shark Construction Kit is a Prize-Winner. Contains plenty of fine quality, carefully sawn Balsa Wood, Hardwood, Plywood, Printed Parts, Cement, Dope, Covering Paper, Spring Wire, Streamlined Wheels, Super "G" Line Control Parts, etc. Together with a large fully detailed plan and instructions for building and flying.

**COMPLETE**  
**\$3.95**  
**KIT**  
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## REGULAR "G" LINE & FREE-FLIGHT MODELS BABY SHARK SUPER SPEEDSTER INTERCEPTORS UP



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The new BABY SHARK, Super Streamlined Speed Ship, is designed for all Class A and B motors. This snappy little job flies at tremendous speeds of from 50 to 75 M.P.H.

### TIGER SHARK SPEED DEMON



**DELUXE**  
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**KIT**  
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The TIGER SHARK, Super Speed Demon, is designed for all 1/2 H.P. motors. It roars through the air at unbelievable speed of from 60 to 90 M.P.H.



Fly the Sensational New INTERCEPTOR, Super Performance Class B Free-flight model. Tremendous climbing qualities. Kit unusually complete.

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### SHARK P-60 "G" LINE MODELS

#### New Rubber Power Kit Two Gas Power Kits

Build and Fly one of these thrilling new ARMY TYPE PERSUIT "G" Line Speed Ships. All Kits are unusually complete throughout.

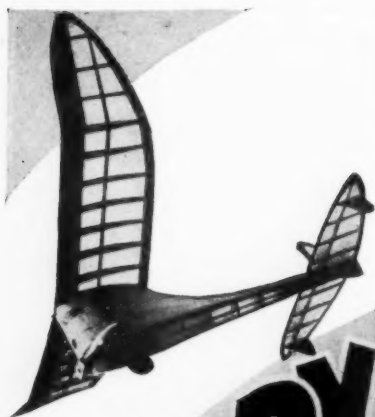
#### Complete Shark P-60 Kits

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LATEST  
GAS MODEL**

Dual type, class A or B. Wingspan 44 inches. Enclosed motor, crutch-type construction. Kit includes full size plans and necessary materials. Motor extra.

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Send 15c postage today for the big new Megow catalog of model airplanes, ships and railroads.

**Megow's**  
PHILADELPHIA, PA.

tests your model in case it stalls and crashes.

When launching toss it gently forward—DO NOT THROW IT! The model's speed should be equal exactly to its normal flying speed; if there is quite a breeze less speed will be required. If the model stalls move the wing backward slightly, 1/2" at a time; if it dives or glides too steeply move the wing forward. Repeat this until the motor is properly adjusted and it glides evenly and gently to the ground.

Now you may hazard a flight. Contrary to the belief of many, a ground take-off is the least dangerous. This must be carried out carefully and precisely. For instance, A MODEL SHOULD NOT BE SHOVED—this often gives it excessive flying speed and causes stalling on the takeoff with inevitable disheartening results. In fact this is one of the big "don'ts" in model flying.

The safest way to test a model often provides a little humor but it gives results and lengthens the life of your plane: A fishline should be attached to the rear of the fuselage; either tied to a small wire loop or through a hole in the fuselage end. The line should be approximately 75 ft. long and all but 10 or 15 ft. may be wound around a stick or a fish pole.

The idea is to allow the model to rise normally from a cleared runway into the wind under its own power and *without assistance*. As the string unwinds and the model gains speed run with your model or play out the string gradually, or both, allowing the ship to take off, figure C. Watch it carefully and if it assumes a normal flight attitude you will know that the ship is properly adjusted and ready for a free flight. However if it starts to stall the tail may be lifted readily by means of the string and the model's flight slowed gradually so it settles slowly back to the runway, WITHOUT DAMAGE.

If upon the takeoff the model veers to the right or left the tail may be pulled back into line by moving the string one way or another. It is advisable to start this operation with the string played out from the reel about 10 ft. If the model stalls on the takeoff move the wing back slightly as in your glide test. If it runs along the ground at great speed for a considerable distance without taking off it is evident that the wing is too far back and must be moved forward.

After adjustment and satisfactory flight, using this procedure, start your model on its first free flight. This may be done by the string method with a length of string of about 15 ft. or the model may be released directly into the wind *without pushing*.

If you are a normal model builder undoubtedly this moment will be one of the most exciting you have ever experienced—the thrill will be unsurpassed—especially if you see your model rise gracefully into normal, stable flight and soar skyward.

If you have remembered to set your timer for about 10 seconds there will be little cause for worry about losing your model. However, if in the excitement you have forgotten to set it—start moving—

and do your best to keep your model in sight, either on foot or in a car if this is available. The best procedure is not to forget the timer!

**VICTORY**

**Sky Scouts**

(Continued from page 13)

Scout headquarters, MODEL AIRPLANE NEWS, 551 Fifth Avenue, New York City.

All units will be assigned an official number, and instructions will be sent telling how units may help their local defense organization program. The local defense boards will also be informed about the Sky Scout units with suggestions concerning the invaluable help they may render.

To qualify as a Sky Scout send in correct sets of answers for silhouettes appearing in two issues. Be sure to send in the coupon attached or a copy with your name, address and number of the planes.

Anyone can become a Sky Scout, even though he has missed previous silhouette installments. These silhouettes will be reprinted from time to time so late entrants can fill in the attached coupons when they appear and send them to headquarters together with answers to current silhouette presentations.

The first two sets (1 and 2) are reprinted here for the convenience of late-comers, so you can start now if you want to be a Sky Scout. As soon as any two sets, correctly presented, are received the first silver pin will be mailed to you. When twelve complete and correct sets of answers have been received from a Sky Scout he qualifies as an Expert Sky Scout and will receive a gold Sky Scout pin.

To qualify for lesson 5, read the description of the plane silhouettes appearing on page 00; then list the name of each plane, fill in the coupon or a copy and mail it to headquarters at the address given above.

Silhouette groups 3 and 4 will be printed with group 6 in the next (July) issue of MODEL AIRPLANE NEWS.

**PLANE 2A**—A long range Naval patrol bomber of unidentified manufacture greatly resembling the Sikorsky flying boats; apparently a product of the Japanese Naval Aircraft Factory. Reputed as having a 3,000 mile range, the craft undoubtedly compares in performance to our own four motor boats. Practically undistinguishable from the Sikorsky excepting for the "floating" type ailerons, no doubt a Germanic influence, this craft will prove extremely difficult to "spot."

**PLANE 2B**—The Nakajima 96, a Naval Torpedo bomber used in close cooperation with the Nipponese Navy units and operable from aircraft carriers. Sufficiently formidable in fire power and armament although sluggish in appearance, the craft assumes an important role in Japan's war efforts. Easier to "spot" than many of the other Japanese fighters because of its somewhat "dated" lines, the Nakajima 96's appear to be much like a Hollywood Production. In appearance it possesses a little of everything of '30 vintage.

**PLANE 2C**—The Nakajima 95, single seat ship-board fighter. Capable of some 200 miles per hour, the craft is believed to be a "souped up" version of the Nakajima 90 originally powered with 450 h.p. Japanese manufactured Bristol "Jupiter," renamed the "Hotobuki." In appearance, the craft is identical to the Boeing P-12 excepting for the wheel pants which are typically "British." Lacking in fire-power, and easily recognizable, the war Navy fighter will undoubtedly find it "tough sledding" after Uncle Sam's lads spot it.

**PLANE 2D**—The Mitsubishi 97, a light bomber serving the Mikado's Army efficiently and effectively. In appearance it resembles the Northrop A-17 with semi-enclosed type wheel pants similar to those first adopted by the Curtiss Hawks of past years. It is powered by a single, liquid cooled engine of unknown make and horse power. Its somewhat blunt shaped nose, slender cockpit en-





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closure and strikingly outmodish undercarriage should make it readily recognizable to all Sky Scouts and Aircraft Spotters.

PLANE 1A—Mitsubishi twin engine long-range bomber used by the Japanese Imperial Army Air Corps is an all metal mid-wing monoplane with a retractable landing gear. Equipped with two 900 hp. Mitsubishi Kinsei air-cooled radial engines; accommodates a crew of three to five. Models similar to this were also designed as freight carriers for the Japan Airways Company for "survey" flights from Tokyo to Teheran as early as April 1939. Dimensions: Span, 82 ft.; length, 52 ft. 6 in.; height, 12 ft. 1 1/2 in. Weight, loaded, 11,000 lbs. Cruising speed, 162 m.p.h.; endurance, 10 hours.

PLANE 1B—Mitsubishi "Karigane" Mk. II (Wild Goose), a single engine two place high performance fighter capable of great flight range is used in appreciable numbers by the Japanese Imperial Army Air Corps. Powered with an 800 hp. Mitsubishi A-14 fourteen cylinder radial air-cooled engine equipped with standard NACA bow and constant speed Hamilton Standard two blade propeller, the ship has cantilever wing design with fixed undercarriage, of metal structure with flush riveted sheet metal covering. Ailerons are fabric covered. Split-type trailing edge flaps are placed beneath fuselage, extending to within three feet of each aileron. Fuselage is monocoque with oval cross-section. Fixed sections of the tail surfaces are also metal covered, movable portions are fabric covered. Cockpit enclosure begins at about the center of the wing section, extends backwards flowing into the vertical tail surface. Pilot is located at forward cockpit while full navigational and communication facilities are incorporated into the aft pit for an observer. Dimensions: Span, 39 ft. 5 in.; length, 27 ft. 11 in.; height, 11 ft. 6 in.; wing area, 258 sq. ft. Weight, loaded, 5,060 lbs. Maximum speed, 310 m.p.h.; cruising speed, 200 m.p.h.; range, 1,490 miles.

PLANE 1C—Nakajima Type 19, an all metal long range bimotor bomber equipped with two 870 hp. Mitsubishi Type IV engines. Of mid-wing cantilever design featuring monocoque construction and stressed skin flush riveted covering. It possesses split-type trailing edge flaps and retractable undercarriage folding forward and up into motor nacelles. Of clean aerodynamic design with statically and aerodynamically balanced elevators and rudder, the craft appears to possess excellent flight characteristics which make for good bomber aircraft. Information regarding performance or additional design characteristics and dimensions unfortunately are not available at this time.

PLANE 1D—Mitsubishi Otori (Phoenix) is an all metal low-wing cantilever type monoplane equipped with two 550 hp. Nakajima Kotobuki III radial air-cooled engines. First designed by order of the Asahi newspaper, it was flown over 2,000 miles from Tokyo to Bangkok non-stop. Capable of accommodating crews of three to five, this craft now becomes a formidable weapon. Modified undoubtedly from its inception, the Otori may now be in use by the Imperial Navy, operated from aircraft carriers. If such is the case one may safely venture a prediction that this type of machine will be among those used for bombing American strategic positions and cities. Unfortunately, at the time of this writing little information regarding it was available.

ANSWER TO "CAN YOU IDENTIFY THIS SHIP," page 13: The Nakajima 95, originally described in the March 1942 issue of MODEL AIRPLANE NEWS.

## PARA-TROOPER FLIES OUT OF SIGHT!

FLIES 10,000 FEET BEFORE BEING LOST



## A CHICAGO BUILDER WRITES:

"The 'Para-Trooper' I constructed from your kit flew out of sight. Model climbed at steep angle, reaching more than 1000 ft. in short time. Followed the model for 2 miles (over 10,000 ft.) before it disappeared completely from sight. I had proper identification on the model and hope it will be returned. The 'PARA-TROOPER' proved to be of simple construction and an excellent flier."

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	V	V-2	V-3
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## The G.E. "Cabinette" Takes Wing

(Continued from page 19)

frame is not warped and that the whole structure is in proper alignment.

Next cement the cabin celluloid windows in place, after which the landing gear and motor mounts can be properly formed and assembled to the front bulkhead. The ignition then can be installed, located as shown in the drawings. When this is done sand the whole structure lightly. The paper covering may then be applied.

When building the wing first cut out all parts to the proper shape, including the spars, ribs, leading and trailing edges and miscellaneous parts. Assemble half the wing at a time by mounting the ribs on the spars at the proper place.

Next cement the leading and trailing edges and curved tips in place. When both halves are done join them together with the splices shown in the drawing, making certain that the wing has the proper dihedral; that is, each wing tip should be raised 2-3/4" from a horizontal line through the leading edge at the wing center. The tips are made from 1/16" sq. bamboo, both tips being made at the same time to insure uniformity.

When all of this is completed cover the center section and then the leading edge with 1/32" sheet balsa. Sand the whole wing carefully and add a little more cement to all joints that may need it.

The wing is now ready for covering. This is done by cutting the paper with a 3/8" margin all around. Apply to the wing by starting at the center and progressively cementing it to each rib as you proceed outward toward the tip. The paper should be drawn tightly from center to tip. Then the leading and trailing edges may be cemented down and the excessive paper trimmed around the edges.

The stabilizer construction is similar to the wing and is likewise covered.

The rudder is cut from a balsa sheet and sanded to a streamline cross-section. It is best to dope and finish this part before it is cemented in the assembly.

The sub-rudder, beneath the fuselage, is made the same as the fin above, except that a wire tail skid is cemented to its lower edge. When these are completed cement them in place on the fuselage.

Now carefully check over all your work and if completed to your satisfaction apply clear dope to all surfaces. While the dope is still wet check the wing and tail surfaces for warp, holding them in the correct position until the dope dries.

The plane may be made very colorful and impressive-looking by trimming it with colored dope.

Flying this little plane is "as easy as eating." First glide it, being sure it has correct balance and turns to the right in about a 50 ft. circle. This may be regulated by warping the rudder slightly to the right. Test the model by starting the motor and hand-launching it very gently into the wind. Do not push it—actually the wind should lift the model from your grasp. This procedure allows the model to assume normal flight angle when starting. Adjust the model until flights are satisfactory. Be sure however that in the test flights the motor runs only for 4 or 5

seconds; after this real flights can be made with longer motor runs.

VICTORY

## Right Off the Flight Deck

(Continued from page 27)

the model Skua is interesting to build and fly. We have accurately reproduced the prototype appearance and flying qualities, yet the construction is comparatively simple. The original model was capable of making graceful, high altitude flights of about 60 seconds duration.

The pages of plans are drawn full size and the two pages with fuselage details should be joined together. It is best to make tracings of the various pages to keep the magazine intact. All balsa wood should be selected carefully to assure a sturdy, light structure; make all frames accurately and finally cement each joint firmly.

**CONSTRUCTION**—Construction can be started with the wing which is made in three parts and it will be necessary to make a left wing plan. Cut the required number of ribs from 1/16" or 1/20" light grade sheet balsa—preferably the later, if available. Sand them carefully to exact shape and size and cut the notches for the spars. Spars and leading edges are cut from sheet stock as indicated and the trailing edge is a tapered 1/8" x 3/8" strip. Tips are cut from 3/32" sheet and assembled over the plan. Assemble the parts right over the plans using pins to hold in place until the cement has set. Finish the parts by cutting and sanding the tips and edges to conform with the air-foil shape. The three parts are next assembled with 2" dihedral at each tip.

The keel and bulkhead method of construction is employed for the fuselage. Notice how the bottom of the fuselage has a curved recess into which the wing is later fitted. Cut the various parts for the four keels—top, bottom and two sides from 1/16" sheet as shown. Bulkheads also are 1/16" sheet and only the notches shown are cut out; others are marked to be cut later. Assemble over the fuselage plans by pinning the top and bottom keels to place. Half of the bulkheads are cemented to position and a side keel attached. Now remove from the plan and add the remaining bulkheads and keel. Stringers are firm 1/16" sq. stock. Attach stringers closest to the side keels first and on both sides at the same time to keep from distorting the fuselage. Cut notches as required for a neat, accurate job. Where the wing fits in, curved 1/16" thick pieces are cut to fit exactly to the wing's upper surface.

From section A to B the nose can be covered with 1/32" sheet or pieces of soft 1/16" sheet can be fitted between the stringers and bulkheads and trimmed round to represent the metal cowl of the real ship. Either method is satisfactory; we used sheet covering on our model. The extreme front of the cowl is made with laminated discs of 1/8" sheet. Remove the centers of the two front discs so a dummy motor can be installed if desired. Trim to shape with a razor blade, then sand to complete the cowl. Details of the nose plug are given and it too is made from laminated discs of 1/8" sheet (hard

# PLANE TALK

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1/16x3/16 10 for 5c	3/16 sq. 4 for 5c
3/32 sq. 20 5c	3/16 sq. 3 for 5c
3/16 sq. 15 for 5c	3/16 sq. 2 for 5c
3/16x1/16 10 for 5c	3/16 sq. 1 for 5c
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3/16 sq. 6 for 5c	3/16 sq. 1/4 for 5c
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3/16 sq. 3 for 5c	3/16 sq. 1/32 for 5c
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## HERE THEY ARE!

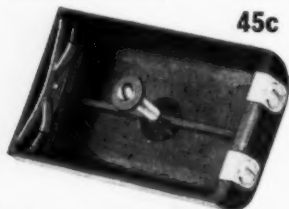
Hillcrest presents an entirely new line of gas model accessories



\$1.25

### ★ Hillcrest Flight Timer

The perfect timer for contest use. The adjustable air valve has been carefully designed and tested to give every broad adjustment, and to eliminate duration changes due to temperature and atmospheric variations. Light and compact it may be used in the smallest Class "A" job. Specifications: Weight less than 1/2 oz.; 1 1/2" long. Built-in contacts with special screw terminals makes it easy to hook-up and eliminates soldering. Duration may be adjusted from a few seconds up to ten minutes. Ideal for operating dethermalizers, flaps, cameras, etc.



45c

### ★ Plastic Battery Holders

For reliable gas model ignition. Light, compact, strong vibration-proof contacts. Holds two cells in series for three volt coils. Two sizes: No. 1 for penlite or dentalite cells. No. 2 for medium 1" dia. cells. Weight 1/4 and 1/2 oz. Solderless screw type terminals. Specially designed spring contacts. Made of tough, "Shatterproof" plastic they will stand a shock of over 100 lbs. without breaking. Cells are held in place with an attachment screw. A wing nut is provided for attachment to the fuselage. Either size .....45c



15c

### ★ Spark Plug Wrenches

Hillcrest wrenches made from hardened steel will fit inside the head fins of any engine without damaging plug or cylinder head. Two sizes: No. 1 will fit V-1 and V-2 plugs. No. 2 fits Hurler, Blue-Crown, V-3 and standard size prop nuts. Each .....15c

HILLCREST MFG. CO.

1279 Third Ave., Los Angeles, Calif.

- ☐ Hillcrest Timer \$1.25  
☐ Hillcrest Battery Holders  
☐ Large size ☐ Small size  
☐ Hillcrest Plug Wrenches 15c

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**HILLCREST**  
 TOPS IN MODEL AVIATION

arate piece of tissue for the top and bottom of each section of wing and tail surfaces. Once all parts are covered lightly spray them with water to tighten the tissue, but do not apply any clear dope until the various parts have been assembled.

Assemble the model Skua in the following manner: The cockpit details are finished first. Before cutting the thin celluloid, make paper patterns of the parts to fit exactly by the "cut and try" method. The rear portion of the cockpit is optional since it is retractable and not visible in combat. Cement the celluloid into place, being careful not to smear the adhesive on the enclosure. Structural details are represented by tissue strips doped to place. If the frames are made with accuracy, the wing and tail will have the correct incidence when attached. Slip the wing in the recess and cement fast; small pieces of 1/16" sq. balsa and tissue are used for fairing the leading edge to the fuselage. Cement the stabilizer and rudder to the indicated positions, checking frequently for correct alignment. Tiny tissue fillets doped over the opening complete the job.

Before adding the more minor details, brush one or two coats of clear dope on the covering. Rubber tubing of the correct diameter is slipped over the landing gear wires; if necessary, slit the tubing and then recement once in place. Wheels are painted before being fixed to the axles by washers soldered to the ends. Sheet balsa covers colored to match the wing are cemented to the struts. The tail wheel and similar items are made from scraps. All items such as cowling details, insignia, control surface outlines, etc., are made from colored tissue. The builder desiring most detail can install a dummy engine within the cowl. Naturally the propeller and similar wood parts should be colored to match the color scheme.

FLYING—Eight strands of 1/8" flat, brown rubber or six strands of 3/16" rubber is required to power the miniature Skua. It is best to lubricate the motor before placing it within the fuselage. Attach the strands to the prop shaft and then drop the other ends through the nose; they are held by a round bamboo pin in the rear.

Test the model hand-launched over deep grass if possible; if not, testhop the ship on a few turns R.O.G. A small weight may be used for balance purposes. Right or left-thrust makes the model circle as desired and a small degree of down thrust corrects a tendency to mush or stall under power. Gradually increase the number of turns as correct balance and stability is attained. Stretch the rubber motor about 2-1/2 times, normal length and use a mechanical winder to store up power for real flights.

In testing the original model a tendency to bank to the left while making a thrilling, steep climb was observed. The glide was slow and in large right spirals. This flight inclination in your model will assure much enjoyment from this tough, miniature fighter.

VICTORY

## Academy of Model Aeronautics

(Continued from page 34)

tions Officer for the Air Cadet League of Canada, who outlined the work of the Canadian Air Cadets. He called for a continent-wide Air Youth program embracing Canada, United States, Central and South America. The Royal Canadian Air Force is now supervising training of Air Cadets and it is anticipated that Cadet members enrolling in the R.C.A.F. will be given credit for their pre-enlistment training in the Cadet movement. This summer Cadets and their instructors are to be guests of the R.C.A.F. at air stations throughout Canada and will live at the training centers, under extensive arrangements now being made.

Two state-wide airplane modeling programs were reported at the Air Youth Conference. W. Percy McDonald, Director of Aeronautics for Tennessee, and Roy G. Fales of the New York State Industrial Arts Education Department outlined plans for teaching aviation in the schools through use of airplane models and ground school programs.

### CAA and Office of Education Set Up Joint Aviation Committee

The U.S. Office of Education and the Civil Aeronautics Administration announced recently they are joining forces in an all-out drive to "air-condition" American youth by stimulating aviation education in elementary schools and high schools. The C.A.A. has been training pilots in colleges and universities since 1939, and the proposed program is designed to round out this work by carrying aviation to secondary schools.

By turning over to schools responsibility for teaching preliminary units in basic air training, the move is intended to create in school youth a thorough-going knowledge basic to a candidate for pilot training and to increase public interest by instilling a thorough knowledge of aeronautics beginning in the earliest grades.

The Army and Navy, through their respective Assistant Secretaries for Air, Robert Lovett and Artemus L. Gates, will work with the two agencies to form policies and draft plans, it was announced.

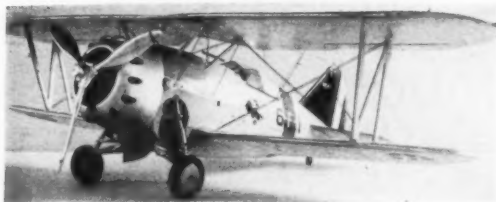
Assistant Secretaries Lovett and Gates, and Robert H. Hinckley of Commerce, together with John W. Studebaker, U.S. Commissioner of Education, are ex-officio members of a joint advisory committee of national aeronautical and educational leaders invited to help guide development of the program.

The two agencies announced that the committee's purposes would be:

1. Serve as a general clearing house committee in which related objectives and problems dealing with aviation education of the four Governmental agencies (Army, Navy, U.S. Office of Education, and Civil Aeronautics Administration) may be discussed, duplication of purposes and operating procedures eliminated and mutual cooperation secured.
2. Stimulate a consciousness and recognition of the need for providing aviation education for American youth.
3. Initiate promotion of aviation education programs for the pre-college age group which will be rapidly geared to war



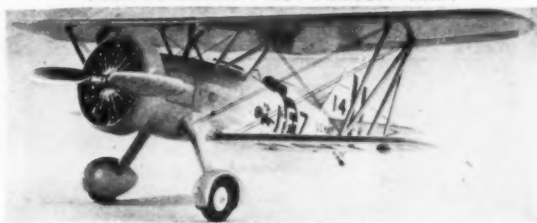
## GRUMMAN F3F1 U. S. NAVY SHIPBOARD FIGHTER



32" Span. Length 24". 1" Scale

A fine detailed model with retractable landing gear, 4" turned balsa motor front, 3 oz. grey dope, 1/2 oz. yellow, 2 oz. glue etc., all parts printed on balsa, 10" propeller, wheels, rubber motor, full size drawing, and all parts. This fighter plane is used in large numbers on the aircraft carriers. Const. Set complete, **\$3.75** postpaid.

## CURTISS HAWK F11C4 PURSUIT NAVY



32 1/2" Span. Length 22 3/4". 1" Scale. Weight 4 oz. Color grey, top wing yellow  
**THE MOST EXCLUSIVE AND FINEST EQUIPPED MODEL IN THE WORLD. MOVABLE CONTROLS WORK FROM COCKPIT.** A special de luxe model, one of the most beautiful ever made. Set contains a 4 1/2" scale Wright Cyclone celluloid motor, detailed push rods, fins, etc., like real motor, 4 1/2" aluminum cowling, 10" steel type carved prop shown, 5/8" wheels, tail wheel, star and rudder insignia and lettering, windshield, instrument board, flying wires, 4 aluminum step plates, aluminum wing walks, ready cut wheel pants, washers, 3 oz. grey paint, 1/2 oz. yellow, 1/2 oz. red, 2 oz. glue, etc. All other parts are printed on balsa wood 38"x44" scale drawing. Const. set, complete in labeled box, postpaid..... **\$4.50**

## NEW MARTIN B26 U. S. ARMY BOMBER



40" Span. Length 35". 3/4" Scale. Color Silver

A beautiful model of the world's fastest bomber. Set has all parts printed on balsa, propellers, wheels, insignia, 4 oz. silver paint, 1 oz. black, motor fronts, full size scale drawing, and all parts to build. Construction set, postpaid..... **\$4.75**

Thousands of this type of plane are fighting for the U. S. and Britain

## 3 NEW MASTERPIECE DE LUXE SOLID MODELS with completely finished bodies

### REPUBLIC P43 LANCER SOLID



14" Span. Length 9". 3/4" Scale. Solid Exhibition Model

Set has completely finished fuselage, headrest attached, cockpit cut out, etc., scale cast motor, cast propeller, wheels, paints, wings, etc., cut to shape, drawing, etc. Set, postpaid..... **\$2.25**

### CURTISS P40F-SOLID



14" Span. Length 12". 3/4" Scale. Solid Exhibition Model

Set has completely finished balsa fuselage, wings, etc., cut to outline, cast propeller, paints, drawing, and all parts. Set, postpaid..... **\$2.00**

### CURTISS F11C4 SOLID MODEL



10 1/2" Span. Length 7 1/2"

This is a special de luxe solid model. Set has completely finished balsa fuselage, cockpit cut out, routed parts, wings cut to shape, 1 1/2" de luxe cast motor, alum. cowling, 3 bladed cast prop, paints, drawing and all parts. Set p.p..... **\$1.75**

### CURTISS SO3C1 SCOUT FIGHTER



30" Span. Length 27". Color, Silver and Yellow

Const. set has all parts printed on balsa, carved prop, set of paints, glue, insignia, drawing, and all parts. Postpaid..... **\$3.00**

### GRUMMAN F5F1 FIGHTER



24" Span. Length 17". Weight 3 oz.

Const. set has all parts printed on balsa, balsa motor fronts, carved 7" props, grey and yellow dope, glue, full size drawings, and all parts. Const. set, postpaid..... **\$3.00**

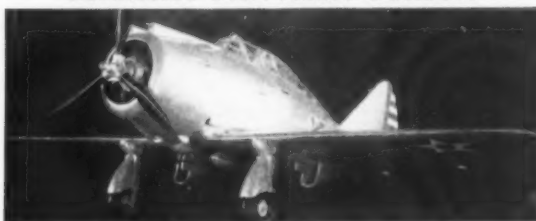
## NEW BELL P-39 AIRACOBRA U. S. ARMY PURSUIT FIGHTER



34" Span. Length 29". 1" Scale. Weight 3 1/2 oz. Color silver, etc.

Hundreds of the type of plane of which this is a model are now being used by the U. S. Army and Great Britain. Construction set includes all parts printed on balsa wood, balsa wheels, insignia, celluloid, axles, prop shaft, 3 oz. silver paint, 1/2 oz. black, 2 oz. glue, etc., turned prop spinner, full size scale drawing, and all parts to build. Packed in labeled gift box. Const. set, postpaid..... **\$3.50**

## SEVERSKY P35A ARMY PURSUIT



32" Span. Length 25". 1" Scale. Color, Silver

Set has 4" turned balsa motor front, 10" carved prop, balsa wheels, tail wheel, rubber, all parts printed on balsa, 3 oz. silver dope, 1/2 oz. black, 2 oz. glue, etc., insignia, and full size scale drawing. New improved model has retractable landing gear and movable controls **\$3.25** from cockpit. Set, postpaid.....

## BOEING B-17 FLYING FORTRESS BOMBER



44" Span. Length 30". Color Silver. Weight 6 oz.

Set has all parts printed on balsa, four 2" turned balsa motor fronts, four 4" carved props, celluloid wheels, set of paints, glue, and full size drawing. Set, postpaid..... **\$4.50**

De Luxe set with 4 aluminum cowls, 4 celluloid motors, 4 metal props, and 2 M & M Air Wheels. De Luxe Set, postpaid..... **\$6.25**

## 1942 CATALOG

Large 6" photos of latest models, gas models, motors, etc.

New Catalog No. 8

Send 10c coin

### ORDERING INSTRUCTIONS

Orders sent west of Mississippi, add 10c postage—Foreign, 20c.

**MINIATURE AIRCRAFT CORP. 83 DANIEL LOW TERRACE STATEN ISLAND, N. Y.**

needs and will enable these youth to prepare for a post-war period in which the airplane will bring about great changes in our economic and social life.

4. Secure a rapid and sound development of aviation education in the country's schools.

5. Review and advise concerning plans and proposals when submitted by various sub-committees.

The executive committee includes Commissioner Studebaker; Assistant Secretary Hinckley; representatives of Army and Navy air arms; Ben D. Wood, Director of the Bureau of Collegiate Educational Research, Columbia University, and chairman of the national joint committee; Gill Robb Wilson, President of the National Aeronautic Association; N. L. Engelhardt, Associate Director of the Division of Field Studies, Institute of Educational Research, Columbia University; T. G. Pullen, Jr., Maryland State superintendent of public instruction; and Bruce Uthus, assistant to Mr. Hinckley.

"Everyone recognizes that aviation will be a vital factor in determining the result of this war as well as a major factor in post-war economy," said Mr. Hinckley. "This program is intended to assure a flow of youth versed in aviation to meet war needs and prepare for tremendous post-war expansion that is in store for civil aviation."

The Office of Education and Civil Aeronautics Administration bring to this assignment a record of experience and service. The U.S. Office of Education is the Federal government's link with 26,000 public high schools and almost a quarter million elementary schools. It has prepared a basic course in aviation education now being taught in District of Columbia schools. Currently it is conducting a program through state departments of education to supply 500,000 scale models of United Nations and Axis warplanes to the U.S. Navy for training purposes.

Since 1939 the Civil Aeronautics Administration, Federal governing body for civilian aviation, has trained 75,000 civilian pilots, and currently its elementary program is turning out 2,000 pilots a month.

How the broad aims of the program to stimulate interest in aviation among school youth might be accomplished was outlined briefly by Com. Studebaker.

"We expect the committee to evolve new programs which schools may add to their curriculums," he said, "but existing courses can also emphasize aspects of aviation."

"Teachers can explain the theory of flight in physics and essentials of navigation in mathematics. They can brighten geography by following through many lands the course of famous flights, and in history classes go back to Leonardo da Vinci, who first set down basic laws of aerodynamics in the 15th Century."

Invited members of the national joint advisory committee are:

Dr. Ben D. Wood, Chairman, Columbia University, New York City; R. V. Billington, Executive Assistant, Division of Vocational Administration, U.S. Office of Education, Washington, D.C.; Dr. Deam R. Brimhall, Director of Research, Civil

Aeronautics Administration, Wash. D.C.; Dr. Leonard Carmichael, President, Tufts College, Middlesex, Mass.; Dr. Willard Combs, Supervisor of Aviation Courses, Secondary Schools, Des Moines, Iowa; Claude V. Courter, Superintendent of Public Education, Cincinnati, Ohio; Dr. N. L. Engelhardt, Teachers College, Columbia University, New York City; Dr. Raymond Franzen, Statistical Consultant on Research for C.A.A., 9 Rockefeller Plaza, New York City; Dr. Robert W. Hambrook, Senior Specialist in Trade and Industrial Education, U.S. Office of Education, Wash., D.C.; Chester W. Holmes, Asst. Superintendent of Schools, Washington, D.C.; Dr. H. W. Hurt, National Director of Reading Program, Boy Scouts of America, 2 Park Ave., New York City; Dr. Carl A. Jessen, Senior Specialist in Secondary Education, U.S. Office of Education, Wash., D.C.; Dr. Alexander Klemens, Professor of Aeronautical Engineering, New York Univ., New York City; Dr. Paul R. Mort, Teachers College, Columbia Univ., New York City; T. G. Pullen, Jr., State Superintendent of Schools, Baltimore, Md.; Captain A. W. Radford, Bureau of Aeronautics, Navy Department, Wash., D.C.; Charles I. Stanton, Acting Administrator, Civil Aeronautics Administration, Wash., D.C.; Frank Tichenor, Publisher, Aero Digest, 515 Madison Ave., New York City; Bruce Uthus, Assistant to Mr. Hinckley, Department of Commerce, Washington, D.C.; Captain Gill Robb Wilson, President, National Aeronautic Association; Major-General B. K. Yount, Commanding General, Army Air Forces, Flight Training Command, War Department, Wash., D.C.; Dr. Maris M. Proffitt, Consultant in Guidance and Industrial Education, U.S. Office of Education, Wash., D.C.; Mr. L. Welch Pogue, Chairman, Civil Aeronautics Board, Wash., D.C.

### Model Aviation Has Gone to War—How About You?

If nothing else, airplane model building has served the useful purpose of educating its followers to the knowledge that air supremacy is necessary to win war and maintain peace.

But in addition, aeromodeling is an essential defense activity—for it can pre-train hundreds of thousands of youngsters in aviation, youngsters who may soon be called upon to fly America's dive bombers and service its fighting aircraft.

Educators, aviation leaders and aeromodelers know that the building and flying of model airplanes provide basic training in aerodynamics, aircraft construction and flight instruction. Knowing this, the officers of the Academy of Model Aeronautics and those who head N.A.A.'s Air Youth division are doing their utmost to make model aviation available to an ever increasing army of enthusiasts—now 3,000,000 strong according to C.A.A. spokesmen.

Those who direct the headquarters activity of A.M.A. and Air Youth have been working longer hours than ever before in an effort to provide modelplane building aids and aviation education materials for the young enthusiast. No overtime pay do they expect or receive. Even the steno-

## KEEP 'EM FLYING with the BERKELEY SUPPLY COLUMN



Keep your old engine and ship in tip-top condition. Use genuine replacement parts and accessories. If you want a new model or motor, try selling your old job. It helps to keep more builders flying.

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Wind Tunnel and dynamometer tested. The Choice of Champions. America's most popular gas model prop.

### NEW AIR SCREW DE LUXE

America's biggest gas model prop value. Mahogany Stained Poplar Wood with polished lacquer finish. Tested and proven superior to any prop in its class. 8" to 14" Dia. **25c**

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Sanded Poplar wood, 8" to 14" **15c**  
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Immediately after the 1941 Nationals, Struck and the Berkeley Engineers with the helpful assistance of the Interstate Aircraft & Engineering Corp., began work to produce America's most advanced model kit. No expense was spared. Many of the details were reduced from the full size plane by photographic process. Unparalleled as a flying model, it has turned in flights of over four minutes with complete detail as shown!

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Just like the 54"  
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graphic help pitches in. Business is not pretty much as usual at headquarters these days. Model aviation has gone to war. And as the clearing house for aeromodeling in America, your organization is working day and night to do the job. But headquarters merely coordinates the work of leaders and members throughout the country. *The real task is in your hands.*

It has been apparent that some who are recognized as aeromodeling leaders have progressed backwards in their thinking, instead of staying abreast of aeronautical trends. These chaps decry some of the suggested wartime regulations for model flying which the A.M.A. Contest Board and particularly its chairman, Everett N. Angus, have labored over so diligently. The rules represent not the Board's ideas alone, but thoughts of modelers everywhere whose suggestions have been sampled in meetings, conferences and surveys. Also consulted were aviation leaders who did not want to see aeromodeling shut down for the "duration."

To cite an example, take the proposal to eliminate fuselage crosssection requirements for gas models. Some leaders were horrified. They don't seem to realize that military craft *without* fuselages are already on the drawing boards and in the air.

The proposal to permit optional launching for gas models met general approval. But a few couldn't see this at all. For their edification we mention here that the London "Daily Mail" has reported the

Nazis utilizing rockets to assist their heavy bombers get off the ground with an additional 1-1/2 tons of bombs.

#### Expert Modelers Must Aid Program

No one will deny that recreation and sport keep up the country's morale. But aeromodeling already has passed beyond the casual competitive and sporting stage to the point where it is developing air-mindedness in the youth of the nation and pre-training devotees for a place in aviation.

Are you aware of the change?

Is your modelplane club still building and flying model airplanes as a hobby?

How about helping America's war effort? Building and flying model airplanes in definite educational sequence to impart a thorough knowledge of aeronautics is an essential defense activity. This must be encouraged. You and your club must do the job.

Here's how you can start: Arrange a meeting with your superintendent of schools. Find out what phases of aviation (if any) are now being taught in classrooms of your community. Convince school leaders that aeronautics starting with airplane model building should be as much a part of the school program as English, physics or algebra. Start junior aviation clubs and training classes in conjunction with local youth organizations. Ask for community sponsorship. Don't hide your efforts. The more publicity you can focus on aviation, the more important

your work will be in America's "Air-conditioning" program.

Above all, act now!

#### New NACA Wind Tunnel Biggest Yet

Moffett Field, Calif.—Providing a man-made super-hurricane for testing full-scale aircraft under controlled conditions, the world's largest wind tunnel is scheduled for completion early in 1944 at Moffett Field, California.

The construction contract awarded by the National Advisory Committee for Aeronautics amounts to over \$5,000,000 and will require a thousand carloads of materials including fourteen thousand tons of fabricated steel. Specifications call for the structure to be finished within 900 days. At the peak of operations the contracting company will employ approximately 500 men at the site.

The mammoth structure, when completed, will dwarf by comparison the present largest wind tunnel at Langley Field. Towering 200 feet into the air, it will measure 900 feet in length, 400 feet in width and cover 10 acres of ground.

#### A.M.A. Credentials Returned Because of Wrong or Incomplete Address

Pfc. Daniel DeForest, 48 Q M Regt. Co. B Apo. 402, Ft. Wayne, Mich.; George DeBlock, 30 Broadway, Jersey City, N.J.; R. W. Field, 1340-1/2 Hewton Ave., Columbus, Ohio; Charles Lewis, 445 18th St., Columbus, Ohio; Henry Lilyquist, 3006 Rhode Island Ave., St. Paul, Minn.; Edward Nye, R.F.D. No. 3, Lawton, Okla.; Harold Osborn, 414 W. 121 St., New York City; Alfred Paternoster, 927 Forest Ave., New York City; George Pedder, Woodland Ave., Esmont, R.I.; Horace Poston, Jr., 508 Oakland Ave., Austin, Tex.; Ed Spaulding, 819 Monroe Ave., Chicago, Ill.; Colin Simpson, Los Angeles, Calif.; Homer Drye, Concord, N.C.; Jack Fedell, Frontenac, Mo.; Wallace Boyd, Houston, Texas.

If you can help headquarters locate any of these individuals by supplying their correct address, please drop us a post card.

#### V.F.W. To Start Model Program

Washington, D.C.—The Sons of the Veterans of Foreign Wars of the United States, according to their official publication "The Acorn" are soon to embark on an extensive aero modeling program. "The Acorn" recently announced that under provisions of the mandates of the Forty-second National Encampment of the V.F.W. held in Philadelphia, a model airplane building program is soon to be inaugurated.

The V.F.W.'s National Department of Americanism is now working on all details and expects soon to distribute a bulletin containing complete information for units to be tied in with the N.A.A. Air Youth program. Although the initial announcement was brief the V.F.W. reports excellent response to the idea.

#### Miller and Robbins Appointed

Washington, D.C.—The Academy of Model Aeronautics announces the appointment of Edward Miller of New York to its Education Committee. Mr. Miller

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Winner '41 Class "C" event with total time of 24 mins., 42 seconds.

Sleek, streamlined—efficient on show line and in the air. Built in adjustments. Sharp right turn under power, slow left circle in the glide. Rugged to 11th degree—strength in every line! Complete kit includes Streamline Wheels and Sillsplan (covering, 60" span, 45" length).

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**CLASS 'B' PACER**

The original plane, 53" span, 37 1/2" length. Complete kit.

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has been long active in A.M.A. activities and is currently drawing up a program of conservation and curtailment of essential materials for the airplane model industries. Mr. Miller replaces Mr. Russell Nichols who is now associated with Headquarters and as such has resigned from the Education Committee.

The Air Youth Division of N.A.A. announces appointment of Richard Robbins of New York as Project's Consultant. Mr. Robbins is well known in the field of Hobby Activities, having organized the first Wisconsin Hobby Show.

National Headquarters also announces appointment of E. F. Bergdorf of Houston, Texas, as Air Youth's first Field Representative. Mr. Bergdorf has been recently elected President of the Southwestern Gas Model Airplane Association. He has been long active in aeromodeling activities in the Lone Star State.

### Hemispheric Air Youth Program

Plans for a hemispheric-wide Air Youth program embracing Canada, United States, Mexico, Central America and South America have been projected at recent conferences held by N.A.A. The plan first started gathering shape when representatives of the Air Cadet League of Canada attended the recent Aviation Education Conference held in Washington.

Subsequent conversations have been carried on with leaders of the United States' wing of the Inter-American Escadrille. This is an organization of aviation leaders who are doing much to promote good-will and coordinate air pro-

grams between the Americas. Two of N.A.A.'s Air Youth manuals are being translated into Spanish and are expected to be distributed throughout South America.

A representative of Air Youth has been in Ottawa this week conferring with the Minister of National Defense for Air and leaders of the Air Cadet Movement. Those in charge of the Canadian Air Cadets have indicated their desire to work in cooperation with the N.A.A. Junior Air Reserve in setting up a two-continent-wide program.

In the light of what Air Youth is doing, the Air Cadets are redesigning their study outline to include the construction of solid scale identification aircraft models.

### VICTORY

### Nationals Bloomingdale Trophy Winner

(Continued from page 15)

model!

WING: Accurate wing construction will be greatly encouraged with the use of cardboard halves of its outline shape, serving as jigs; material from showcards or old suit boxes is ideal for the purpose. Rib positions are drawn in and "V" notches are cut 1/4" wide for rib to spar joint clearances. The drawing gives rib length dimensions to inside of spars and are therefore proper for jig size.

Cut four spars tapering from 1/16" sq. to 1/32" sq. in 17" lengths, from a sturdy grade of indoor balsa. Sand corners off with 10/0 sandpaper to give a round sec-

tion, soak spars few minutes in water and hold them to jig with pins, being careful not to pinch wood in doing so. Ribs are cemented in place as soon as spars dry. They are cut from 1/32" quartergrained sheet, with aid of a metal template of airfoil; excess lengths being cut off trailing edges for shorter ribs. Wet 1/32 sq. in. tips and bend to shape over round portions of a heated electric soldering iron. The completed wing halves are cemented together to dry at proper central dihedral angle.

Covering is accomplished with two 24" long hoops of microfilm, of sufficient thickness to give red and green reflections. Melt films 3" on ends to allow sliding wing halves under their surfaces.

Use saliva for adhesive and trim off excess film with a hot wire. Put in are dihedral by re-wetting tip spars, propping them up to dry in correct position and tightening the loose film by moving the hot wire near the film.

FUSELAGE: Fuselage frame is of medium hard indoor stock, 1/20 sq. in. construction throughout. Build two separate sides over wax-paper covered plans, and finally add necessary cross members to complete other sides. The 3/32" superfine tissue strips are cemented in place diagonally with heavy dope, to serve their purpose of rendering fuselage twist resistance.

The tail boom must be in place before removable rear section of fuselage is cut off to insure accurate angular settings of tail surfaces. Build from a 6 3/4" length of 1/64" sheet tapering in width from 9/16" to 3/16"; soaking and bending over a round tapered hardwood form, wrap it with gauze, dry in oven, and finish by cementing seam.

Wall for accommodating rear hook is of 1/32" sheet, reinforced with 1/16" to 1/32" stays; cemented cross-grained in a position to allow proper plug fit to fuselage.

The .014" music wire hook will be anchored to a short piece of 1/16" sq. balsa cemented in back.

The "T" type landing gear may be added after covering 1/32" wide strips of negative film form wheel rims, and rolled tissue hubs are used with 1/32" sq. spokes, slivers of 1/100" round bamboo making excellent axles.

TUNGSTEN BRACING: To aid in locating tungsten a large sheet of white paper should be spread over workbench top. "U" clips of aluminum hold wing to mounts on top corner of diamond fuselage. Leading edge is braced top and bottom; the lower braces running from clips on midway longeron out to tip dihedral joints, and upper braces running from bracing post to tip dihedral joints, in same manner, to give a perfectly rigid leading edge.

The remaining braces run from longeron fastening clips in a diagonal manner back to trailing edges. This prevents wings from washing in and a top brace for trailing edge is positively unnecessary. In all cases never weaker longerons by pinching clips tightly on them.

In packing the wing may be removed and to prevent kinking of tungsten, hold clips together at wing center with a 3" length of balsa.

Build tail surfaces around cardboard forms in same manner as wing. Tail outlines taper from 3/64" x 1/32" at center to

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- At what angle to set the stabilizer.
- How big to make your plane . . . how much power it should have.
- What size propeller to use.
- How much rubber to use in a motor for any given weight.
- What makes a gas engine run. Etc., etc.

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## **The Author**

**CHARLES HAMPSON GRANT**

—Princeton Engineering School; Massachusetts Institute of Technology; member of the “Early Birds”; for 20 years the world’s foremost model flying authority; for the past ten years Editor of **MODEL AIRPLANE NEWS**.

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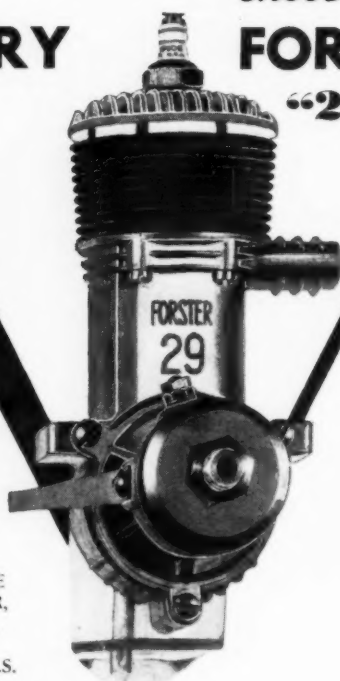
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DISPLACEMENT  
IS NOW AVAILABLE  
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WRITE FOR DETAILS.



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Quality  
"B" Class,  
1 5 H. P.  
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**FORSTER BROTHERS**

1415 Lake Street

Melrose Park, Illinois

1/32" sq. at tips. Square ribs are cut from sheet of 3/128" thickness. Assemble stabilizer at zero degrees incidence and rudder with 1/4" left circle.

Propeller is carved from a block of light balsa measuring 11/2" x 1" x 15". Laying out two blanks congruently along black, gives security of equal quality wood in both blades. Carve undercamber first, then as topcamber carving brings blade to 1/16" thickness work down to proper thickness with varying grades of sandpaper, progressively from coarser No. 2 down to 10/0 for final polishing. Be very conscientious in making sure both blades are identical in pitch, weights, strength and outline. Slip shaft through 1/64" sheet, built up plug, insert washers and cement securely to hub.

**FLYING:** Wing position should be at a point of flying balance somewhere along mounts, moving it fore or aft to meet correct position, as can be determined by testing model with 200 turns. About two degrees downthrust is useful in overcoming drag of fuselage and preventing stall tendency under full power. Washout alignment can, at any time, be corrected by moving clip with double tungsten brace forwards or backwards. Circles of about 35 ft. and a slight bank flies the model properly.

On its winning flight a 22" loop brown rubber was lubricated and prewound twice. Two-thousand two-hundred turns proved enough to bring model to roof of low ceiling under which ship was flown. 2,400 turns could safely be stored in this motor for flight in building of higher ceiling.

Do all winding outside the model and pull motor through with 1/16" wire rod hooked on end. Winding can be much more pleasant and your ship will have more than "nine lives."

**VICTORY**

### Modeling Planes for Uncle Sam

(Continued from page 11)

line. With a hard pencil, scribe the front view of the wing and proceed to taper each panel. Note that the center section of the wing is left flat so that it will fit snugly to the fuselage. No fillet is carved into the root section. The block assumes the shape of the corresponding section of fuselage in both front and rear views.

Before assembling the wing and fuselage, set the proper dihedral angle. To accomplish this, first cut the wing along the center line. The root of each panel is then bevelled and the ends placed together. A quick drying cement holds the panels at the correct angle. The dihedral gauge should be used in checking the angle. Trim the upper surface of the center section to get a flat surface prior to cementing the wing to the fuselage. Movable surfaces such as ailerons and aileron tab should be indicated by a thin groove in the surface of the wing. Refer to the final assemble diagram when cementing the wing to the fuselage.

Next construct the belly block, which is the small block fitting into the fuselage beneath the wing. A block 3/4" x 1 1/8" x 3/8" is used. When constructing this

portion of the model, care must be taken to cut a Vee surface at the top of the block so that it forms a flush fit with the bottom surface of the wing after the correct dihedral angle has been set. When this is accomplished, cement the belly block into position.

The tail surfaces are made of 1/16" stock 1" x 3 3/4". Note that the upper and lower surfaces of the elevator center section is left flat so that it forms a flush fit with the fuselage. After forming the tail surfaces, indicate movable portions as with the ailerons. Now cement the tail assembly to the fuselage.

From a piece of 3/8" dowel, form the spinner and then cement it to the fuselage. Prior to doing this however, indicate cowl opening openings as illustrated in the front view of the assembly drawing. This may be done in much the same manner used to indicate movable surfaces, i.e. use a thin groove to indicate the outlines of the cowl openings. Now cement the exposed portion of the tail wheel in place, shown in the side view.

The model is now ready for finishing. Apply several coats of clear lacquer, sandpapering thoroughly after each coat has hardened. The final coat of dull black lacquer is then applied to the model. This is a Government specified finish with which you must comply if your model is to be accepted.

We repeat: when your model is completed take it to the manual training teacher of a junior or senior high school in your neighborhood. He will see to it that the model is properly packed or instruct you in the correct procedure. The model will then be sent through the proper channels to the Bureau of Aeronautics of the U.S. Navy in Washington, D.C. Under no conditions are you to ship the model directly to the Bureau yourself nor are you to write the Navy Department referring to matters pertaining to the identification model. Your local high school manual training teacher or MODEL AIRPLANE NEWS will act as clearing house for any information desired. Please cooperate by not making contact with the Navy.

Take a slap at the Jap by turning out as many of these models as you possibly can!

### Be Sure to Provide Suspension Hole in Navy Models

One point that has been overlooked has been the suspension hole passing through the model's center of gravity. This is to be used for suspending the model when used in the classroom, to represent full scale ships in flight.

To determine the correct position of the hole tie a thread to a point then stick the pin in the top of the fuselage and suspend the model by the thread. If the model balances horizontally this is the correct position of the hole; if not, try one point after another until the correct point has been determined.

Then drill a 1/16" hole down vertically through the center of the fuselage at this point. Counterbore a 1/32" hole up from the bottom, thus enlarging the 1/16" hole at its lower end, forming a recess for the knot at the end of the string which will suspend it. The knot will prevent the string from pulling through.



Perform this operation after the model has been painted. If necessary touch up bare places with paint after the hole is drilled.

## VICTORY

### Wildcat Warrior

(Continued from page 17)

plating. The streamlined enclosure aft the pilot's hatch is a separate structure riveted over the main fuselage assembly. A feature of the type is vision downward provided by two glass panels in the cockpit floor, a unique feature in fighter design.

Wings are of two spar design, the bending loads carried on an "I" beam structure built up of an upper and lower cap riveted to a solid sheet web. Vertical stiffeners reinforce the spar web. Ribs are the pressed flange type riveted to the spar web and spanwise stiffeners, the entire structure covered by sheet Alclad.

They are almost rectangular, sweepback in both leading and trailing edges and "square" tips effectively cutting down on tip-wash as well as simplifying production.

Stabilizers are similar in construction to wing; rudder and elevators are all metal, fabric covered. Ailerons are also fabric covered; all control surfaces equipped with trimming tabs controllable from the cockpit.

Landing gear is the famed Grumman patented design utilizing hinging main strut which breaks at its mid-point, the hinge-point moving inboard into large openings provided on either side of the fuselage. Drag links hinged at the fuselage bottom fold upward bringing wheels upward and inboard into recesses flush with the fuselage. This mechanism is both hydraulically and mechanically operated as are the wing flaps.

Power is provided by a single Pratt & Whitney Twin Wasp Senior engine model R-1830 which develops 1,200 horsepower for takeoff. Engine is equipped with two-speed supercharger making top engine performance available at any altitude within the airplane's effective range. It has compression ratio of 6.7:1, low blower ratio of 7.15:1 and high blower ratio of 8.47:1. Propeller is geared 3:2 with the engine making maximum hp. available without excessive propeller losses. Engine develops 650 hp. @ 2250 r.p.m. @ 19,200 feet and has a cruising rating of 750 hp. @ 2250 r.p.m. @ 17,000 feet. Maximum normal rating is 1100 hp. @ 2550 r.p.m. @ 6,200 feet and takeoff hp. (one minute duration) is 1,200 hp. at 2700 r.p.m. The R-1830 weighs 1460 pounds dry, has a length of 63.31 inches and is 48.13 inches in diameter.

The Hamilton Standard Hydromatic full-feathering three-bladed propeller is equipped with blade "cuffs" for full-power warmup while still on board the carrier, providing adequate cooling for the hurried warm-up.

The entire powerplant section is completely encased in a huge long-chord ring cowl which features the Wildcat. Carburetor air intake is located atop the engine ring cowl in a small inlet which directs air along the top of the skirt section aft and down into the carburetor.

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The oil tank is located within the landing gear compartment and the heated engine oil is cooled by two cartridge-type oil cooler core radiators located beneath each wing surface. The engine exhaust is routed through two manifolds to the lower portion of the cowl skirt section where it is forced out. Adequate cooling is provided for fast climb by hydraulically operated engine cowl flaps located at the engine cowl trailing edge.

The pilot is located atop the fuselage just over the wing, completely enclosed in a sliding canopy enclosure. The windshield is composed of metal frame supporting a panel of bullet-resistant glass and five panels of curved laminated plate glass. Sliding hatch is made up of plastic acetate acrylin base panels; entire assembly slides rearward on two tracks, one on either side of the fuselage.

Vision downward is obtained through three lucite panels, one in the fuselage bottom and two on either side. By looking straight down between his legs the pilot can spot enemy airplanes attempting

"pot shots" from the normally blind belly.

Complete radio transmitting and receiving equipment is carried mounted within the cockpit on the pilot's right side. An antenna mast, atop the headrest fairing, rakes forward to provide sufficient antenna length for signal reception and yet clears the sliding hatch at its lower end when the hatch is open.

Armament aboard the Wildcat consists of four .30 or .50 caliber machine guns mounted in pairs in each wing panel just outside the propeller arc. Guns are fired electrically by triggers mounted on the control stick grip and use of solenoids mounted on the guns. The mechanism permits guns to be fired either in pairs or in salvo. Ammunition, 200 rounds per gun is carried in metal cartridge containers within the wing, is loaded automatically and the links and empty cases are ejected through slots in the bottom of the wing.

Provisions have also been made for mounting four 25-lb. bombs in external racks mounted in pairs in each wing panel just aft the oil coolers. These



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racks can carry bombs weighing up to 100 pounds each. The release mechanism is operated electrically and bombs may be dropped in any pre-determined order or in salvo according to the pilot's manipulation of the switches.

In a small baggage compartment, located on the starboard side of the rear fuselage, are stowed engine handcrank, plane tie-down fittings, tool kit, and personnel kit for long distance flights.

Emergency rations, carried in a small container behind the pilot's seat, is composed of a water flask, dried foods, axe, matches and a small pocket compass. An inflatable life jacket serves as flotation in event of forced landing. A small carbon dioxide flask is mounted within the cockpit which, when attached to the life raft, generates a gas under pressure filling the life raft or "Mae West," as it has become known in the Royal Naval Air Service. In addition the wings have been divided into water-tight compartments which afford flotation characteristics for the airplane for an unlimited period on the ocean surface.

The cockpit is equipped with a "Very" pistol and a variety of colored flares for use in signaling in event of a forced landing at sea.

The Wildcat, with a wingspan of 38 ft., is 28 ft. 10 in. long, standing 9 ft. 3 in. high, and has a gross weight, loaded, of 6,100 pounds. Top speed is 350 m.p.h., cruising 297 m.p.h. Cruising range is 1,120 miles for normal operation but this can be increased through installation of dispensable fuel tanks either within the fuselage or mounted in the bomb racks.

The Wildcat is manned by the 5th Fighting Squadron aboard the U.S.S. Yorktown, the 6th Fighting Squadron aboard the U.S.S. Enterprise and the 8th Fighter Squadron aboard the U.S.S. Hornet, according to last reports. Naval restrictions do not permit confirmation of this but it appears to hold true on the basis of stories concerning Naval aircraft operating in the Pacific with these units of the fleet.

The Marines also fly the Wildcat at their various far flung stations and at least a section of them are known to have been operated from Wake Island before Japanese occupation. They have participated in the Marshall Islands attack, the Macassar Straits campaign and the more recent U. S. Naval engagement with the Japanese fleet known as little "Jutland."

The original Naval order was for 78 Wildcats type F4F-3 followed by an order

for 243 type F4F-4, an improved version with the new self-sealing fuel tanks, oil tanks and fuel and oil lines in addition to heavier armament and a more powerful engine. Recent wartime appropriations have expanded these original orders until the present schedule calls for an "all out" production at the new Grumman factory out on Long Island, New York.

The Wildcat has become the Navy's standard fighter along with the Brewster Buffalo and together they have proved the value of the Navy's years of intensive training, constant practice and far-seeing tactics, which gained for it the enviable reputation of the finest naval aviation service in the world. Three campaigns have tested the Wildcat's claws and they have come through snarling and defiant. Hundreds are now far out in the Pacific with fangs bared each dawn eager for a scrap. With these tenacious, deadly fighters aloft far out to sea, be sure that the enemy will be met with fury and strength and Jap fur will fly. On the sleek wings of these ships rests a tradition of many years—the Wildcat fights to the death.

#### BUILD A MODEL WILDCAT

Get dimensions for stock from the three-view plans. Carve fuselage block into a rough cylindrical shape and apply templates for fuselage crosssections. Take coarse sandpaper and sand to rough shape, using progressively finer grades until the template fits the fuselage. Cut wings according to plan view and sand to a tapered shape. Use fine sandpaper to get the proper airfoil curve and fit wing templates at the proper stations.

Cut the tail surfaces from sheet balsa and sand to shape preserving a good airfoil contour.

Paint fuselage, wings and tail surfaces separately taking care not to apply paint to the attaching points.

Attach the various components with cement and let dry. These may be propped up by small balsa blocks while drying.

The landing gear should be built up with bamboo sticks. The pilot's cockpit may be built up of bamboo sticks covered with cellophane.

Use a bamboo stick for the aerial mast and tail wheel.

The color scheme for the Wildcat as used by the U. S. Navy, is a dull, battleship-grey throughout. The squadron identification numbers may be applied in white. Purchase star and circle decals and apply with cement. After assembly the entire plan may be sprayed with a coat of clear lacquer to provide a good, lustrous finish.

Apply hinge marks and various steps, landing gear cut-outs, etc., with an India ink line.

Follow plans carefully in the construction of the parts and take great pains that all details are included accurately. A faithful model of the Navy's mighty Wildcat will decorate any "den" to perfection. Let us hear from you with photographs, send them to "Airways."

VICTORY

Model Airplane News - June 1942

## Our Air Force Is Streamlined

(Continued from page 8)

commands are the complete combat Wings for each of the various tactical missions. Here are found Headquarters for the Fourth Wing, heavy bombers divided between Westover Field, Massachusetts and the Army Air Base at Bangor, Maine; the Seventh Wing, an interceptor wing flying fast Lockheed P-38 and Bell P-39 "Air-cobra's" divided between Mitchel Field and Windsor Locks, Connecticut; the Second Wing, medium and heavy bombers stationed at Langley Field, Virginia (research center); the Sixth Wing, made up of both fighters and interceptor stationed at Selfridge Field, Michigan and Fort Wayne, Indiana and the Sixteenth Wing which utilizes light bombers stationed at Bowman Field, Kentucky and Manchester, New Hampshire. Thus, this First Air Force is responsible for the defense of the Northeast Air District and extends as far west as Michigan, as far south as Virginia and includes all of New England. In the improbable event of a sea-borne air invasion of America by Germany, this First Air Force will be the first hurdle for the Luftwaffe to leap.

The Second Air Force is centered at Spokane, Washington and is called upon to protect the vast Northwest Air District. It will be the first line of aerial defense in event of a Japanese air invasion. It is made up of the Fifth Wing composed of light, medium and heavy bombers stationed at the home base on Sunset Field in Spokane, the Army Air Base at Pendleton, Oregon and McChord Field in Washington. The Twentieth Wing is a medium and heavy bombardment wing and is divided between Salt Lake City, Utah and Boise, Idaho. To augment this powerful bombing force and to attack enemy raiders before they have passed inland, the Eleventh Wing is a fast-climbing interceptor wing with bases at Portland, Oregon and Everett, Washington.

The Third Air Force is in the vital Southeast Air District and home of the Atlantic air patrol protecting the vast reaches of the Caribbean Sea and our possessions and protectorates in the West Indies. This force will be called upon to defend our shores against an invasion originating from Africa, across the Azores and against our Southeast frontier. This Third Air Force is made up of the Third Wing, medium and heavy bombers stationed at Air Force headquarters at Drew Field, Tampa, Florida and McDill Field, Orlando, Florida; the Twenty-first Wing, also medium and heavy bombers at New Orleans, Louisiana and Jackson, Mississippi; the Seventeenth Wing, light attack-bombers at Savannah and Fort Benning, Georgia (this latter the giant parachute-troop training center); the Eighth Wing, an interceptor command located at West Palm Beach and Tallahassee, Florida and the Twenty-Second Wing, both interceptors and pursuits at Augusta, Georgia; Charlotte, North Carolina; Baton Rouge, Louisiana and Meridian, Mississippi.

The Fourth Air Force centers around giant March Field, Riverside, California and is designed to protect the nation's vast Southern California aviation industry and ship-building yards from the onslaught of

## PLENTY COOKIN'...

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a Japanese air-borne invasion off this rich California coast. This Southwest Air District is made up of the Ninth Wing, fighter-pursuit stationed at March Field; the Fifteenth Wing, made up of light attack-bombers and divided between Fresno, California and Oklahoma City; the Tenth Wing, fast-climbing interceptors out at Hamilton Field, California protecting San Francisco and the Golden Gate and the First Wing, medium and heavy bombardment planes stationed at Tucson, Arizona and Albuquerque, New Mexico.

Thus we see the wide-spread dispersal of the bombing, pursuit and interceptor Wings of the Army Air Forces. These wings are divided up into from two to four Groups which are normally made up of either a bombardment, pursuit or interceptor Squad-

rons, Air Base Squadron, Weather Squadron, Reconnaissance Squadron and Communications Squadron. For this reason these wings are often divided up into several different fields, each of these Air Bases having a complete, unified group based there. These groups are made up of three or four squadrons, which also may be located at different fields. A wing may have from 55 to 250 airplanes under its command, a group will consist of from 26 to 80 planes and a squadron will be made up of from 5 to 25 planes. The smaller numbers above refer to bomber types, the latter to interceptor types. Even these squadrons are broken down into Flights of from 3 to 9 planes each.

Thus, as a typical example, suppose Lieutenant Robert Smith is a pursuit pilot



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attached to the Ninety-fourth Pursuit Squadron stationed at Selfridge Field, Mount Clemens, Michigan. He will be but a tiny link in a chain which progresses directly in authority and responsibility to the President! His Squadron will be attached to the First Pursuit Group which will be directly responsible to the Sixth Wing commanded by the First Air Force in New York City. Going still further, this Air Force will be under the direct supervision of the Combat Command which answers to the Chief of the Air Forces. Even this high authority is responsible to the Assistant Secretary of War for Air and thence to the President!

The Materiel Command is the other primary command of the Army Air Forces and centers around huge Wright Field, Dayton, Ohio. This Materiel Command handles supply of guns, planes and equipment to the Combat Command which does the fighting. Thus, it is divided up into Training Command and Ferry Command. Training of not only the thousands of pilots necessary for this expanded Air Force but the tens of thousands of ground-crew men, technicians, mechanics and dozens of different specialists such as armament, radio, photography, etc., has become one of the major problems faced by the Air Forces' officers. Not only must trained men be made available but airplanes and their equipment, air bases, runways and service facilities, communications and outfitting of men, machines and airfields must be handled in the fastest, most thorough and most efficient manner.

Much of this work is handled by the pioneers at famed Wright Field where test pilots, structural engineers, scientists and specialists of every description are laboring day and night to perfect and improve new types of equipment for use in this new Air Force. Every article used by the Combat Command must be developed, tested, retested and tested again at Wright Field

before the stamp of approval of these experts is placed on the item. As to what per cent our new Air Force's efficiency is owned directly to these men it is impossible to state, although it must be exceedingly high. Their work, in cooperation with the N.A.C.A. at Langley Field, has made our airplanes go faster, our pilots fly and fight at greater altitudes, our engines more powerful, our fuel slower burning and more potent, our parachutes a surety rather than a gamble, our radios with longer range, our guns more deadly, our Air Force the most efficient and powerful in the world. It is the task of the Ferry Command to see that the planes are flown swiftly from the factories to where they are needed with a minimum of time and a maximum of safety. Thousands of pilots, most of them civilian transport pilots hired for the job, are daily taking off from the many huge aircraft factories and rushing the planes to the bases, be they on Long Island or Burma, so that little time is lost in this great race against time.

Randolph Field, San Antonio, Texas has given this new Air Force men skilled in the piloting of our new combat planes, from the fast-climbing four-hundred-miles-per-hour interceptors to the gargantuan four-motor super bombers. Chanute Field, Rantoul, Illinois has given this new Air Force men skilled in servicing and maintaining all types of combat planes, in handling machine-guns and cannon, in handling high explosive bombs, from tiny 25-lb. fragmentation practice types to giant 4,000 lb. monsters of destruction.

Summing up the efforts of the U.S. Army Air Forces reorganization we see that it is a vast but tightly-knit organization, under its own command, consisting of 17 wings and 54 combat groups, 39 of which are in the Combat Command and the remainder scattered to the far ends of the earth, in Hawaii, Puerto Rico, Canal Zone, Alaska, Australia, India and Africa. It is a force consisting of approximately ten thousand airplanes (growing daily), five hundred thousand officers and men, 36 air bases and billions of dollars worth of equipment. Tomorrow it will claim fifty or sixty thousand airplanes, a million officers and men and a combat yet flexible command which will be the envy of the world.

Standard equipment in this new streamlined Air Force are new and even more streamlined interceptors and bombers. The Lockheed P-38, the Bell P-39 and the Curtiss P-40 are now standard interceptors and pursuit planes with the Republic "Thunderbolt" P-47 soon to join the squadrons.

These planes, while not the fastest in the world (they carry nearly twice the equipment of standard German and British types), carry the heaviest armament, are the safest and strongest ever built.

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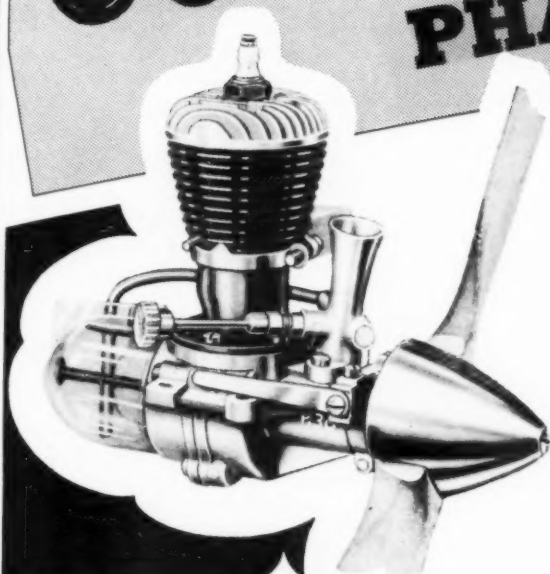
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## VICTORY

### Air Ways

(Continued from page 25)

many branches of the aviation field, where they have proved themselves worthy of rapid advancement for one particular reason, namely, they were familiar with the fundamental principles of aerodynamics, ac-

quired through the building and flying of model airplanes. During the past two years of defense activities I have received letters from possibly a score of my boys, from aviation plants in several states, where they are doing valuable work as model makers, engineers and assembly men. Also from several Air Force bases and repair depots, where my ex-members are serving in our Air Forces.

"Multiplying my experience with other leaders throughout the country, one must conclude that model aviation is of definite value to our war effort and is deserving of every encouragement rather than the reverse. The Academy of Model Aeronautics at Washington has ample evidence in its files—in the form of expressions from outstanding leaders in all phases of aviation, military, naval and civil—attesting to the value of model airplane building. I commend these to your attention with the sincere request that you use your good offices towards assuring our air-minded youngsters continuing supplies of materials necessary to permit them to *teach themselves*, through practical experimentation, the principles of aerodynamics and flight, so that they may be better prepared to help keep America First in the Air."

We are sure these express the thoughts in the hearts of many model builders. So far the modelers who have sent us notification that they have written to the President, and who consequently are eligible for the Air Ways Honor Roll this month, are:

June and Jack Dyer, Brisbane, Calif.; Harry C. Copeland, Syracuse, N.Y.; Sherman Schultz, Chicago; Bill Griffiths, Longview, Wash.; Ray Anilonis, Elizabeth, N.J.; A.M.A. 1381, Philadelphia; Alan Broder, New York City; Joe Moore, Willcox, Ariz.; Mr. Marion Stutes, Three Oaks, Mich.; Francis Wolford, LaPlata, Mo.; Richard Downes and Carlo DeFranco, Brooklyn, N.Y.; Clarence W. Miller, Columbus Junction, Iowa; Warren Krenz, Milwaukee; Keith Mannier, Algonac, Mich.; Ted Tuttle, Norfolk, Va.

Model builders from various parts of the country have sent in some interesting contributions for this month; one of the most outstanding is picture 9. Credit goes to

two individuals for this creation: the builder, Jon W. Hauser of 1774 Seward Avenue, and the photographer, Lewis B. Simon, 1160 Seward Avenue, Detroit, Michigan. Some may think that pictures of full size aircraft have no place in Air Ways and unquestionably they are right. But do not let this picture fool you—the ship you see is not a full scale plane, but a model! We know it is hard to believe but this is a fact, and truly an amazing one. Needless to say Mr. Hauser is a genius at model building; this plane required many hundreds of hours for him to build. In fact it would be nearly as difficult to build a full scale airplane of this Grumman F3F-2 as the model, for every detail has been faithfully carried out, even to shielding on the spark plugs, bolts on the crankcase, rivet heads, air vents, and all features characteristic of the full scale ship. Many cannot be seen, such as the cockpit details: instruments, controls, seat cushions, fire extinguisher, etc.

It is also difficult to take a photograph so that a model's interesting characteristics are not obscured. Mr. Simon deserves great credit for his reproduction; it is a real work of art. Those who have tried to get pictures of their models will realize how difficult it is to get the proper effect.

The Piper Aircraft Corporation makes an interesting announcement. It is holding a contest, entitled Piper Wings for Youth Competition, open to young men and women between the ages of 12 and 19 inclusive. All competitors are to build a detail scale model of the Piper Cub from plans which will appear in the various newspapers throughout the country day by day. Those who so desire will be able to secure completely detailed blueprints from the newspaper.

Picture 6 shows a beautiful model of a similar Cub built by Manning Goldense of 95 Young Street, Pawtucket, R.I. It has a 50" span and was built for flying. The competition model, however, will not be flown, but will be a scale model. All those interested in entering this contest and who wish further details should write the Piper Aircraft Corp., Lock Haven, Pa.

Most of our readers know Jim Walker of 1166 N.E. 31 Ave., Portland, Oreg., shown in picture 1 operating his U-control model. Though occupied with the manufacture of model aircraft Mr. Walker is primarily a model sportsman, one of the most enthusiastic fans in the game. He is always developing something new and interesting and following the course of a true

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aeronautical experimenter, using models as a medium to develop many of his ideas. In the picture he is shown operating the remote control mechanism.

Here the operator stands outside of the flight circle, the control lines being carried from the center outward to the levers shown in the picture. This mechanism at least prevents operators from becoming dazed from spinning around on one foot while trying to follow their speeding plane through lap after lap.

Some fellows take great pleasure in making unusual flying craft; apparently their main idea is to put as many design and structural features in the ship as possible. Such procedure is highly interesting and a certain outlet for originality. Very often there are so many original features that peculiar flight characteristics cannot be traced to any one. In such instances it might be better to try out one at the time and note variations in performance; in this way it is possible to track down the effect of various design features.

Picture 10 shows one of these unusual planes, held by its builder, Bob Hildebrandt. It is unique in many respects: the pod fuselage with the wheels protruding from its underside like a tongue, its combination gull and polyhedral wing, the boom tail, the dihedral-tip stabilizer used in addition to a normal fin, and the two small surfaces protruding outward from the stabilizer, functioning both as skids and vertical tail surfaces. In spite of these many unique features the model is extremely well designed from a stability standpoint. Actual flights bear out this indication; it is very steady. Bob has been seen flying his ships at Creedmore and other sites on Long Island, New York.

In picture 7 you see what apparently is a large size dragonfly held in the palm of a hand; however, close scrutiny will disclose it as a Fokker D-7, built by Leonard Holt of 450A North 7 Street, East St. Louis, Ill. To our knowledge this is the smallest model yet produced, having a wingspread of 1-15/16" with a length of 1-1/4". Believe it or not, this is not a solid model but has a completely built-up framework, the only solid parts being the wheels, prop and nose block. The wheels roll and the prop spins; the guy wires are of copper, finer than human hair. Covering of the wings is superfine tissue which is doped red and black. Such work will even challenge the finest watchmakers, and unless you see this little ship it is hard to believe that such fine work is possible. Congratulations to Mr. Holt!

We hear from James M. Wade who lives at "Maebert," Albert Road, Sligo, Ireland. There is very little model news from this country and therefore Wade's communication is most welcome. He sends us picture 2, one of his fuselage models in full flight. It looks very much like a large craft coming in for a landing, posed as it is against the background. Wade writes:

"Model aviation in Eire is increasing to a great extent in spite of the present conflict. Many gas jobs are under construction, so the summer should see quite a few dawning up in the blue. Most of the lads are beginners at the game but one or two old hands, such as Dr. Charles of the Dublin M.A.C., will give these beginners a few

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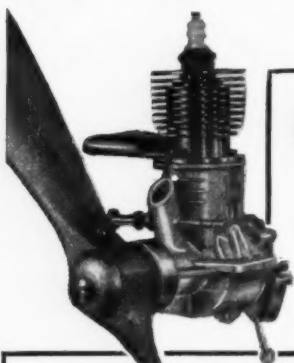
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tips and encouragement in the art.

"There is no ban on the flying of gas models in Eire, such as exists in Britain and Northern Ireland, but we are keeping our fingers crossed.

"Nationals are now held every year in Eire for Wakefield-type rubber driven jobs and gas models. Rules are the same as for the regular Wakefield contest, so when peace is restored Eire will be represented at the famous international contest.

"The ship in the picture has a span of 35-1/2", length of 26-1/4" and swings a 12" propeller. It weighs just 4 oz. and is driven by 6 oz. of 1/4" flat rubber. The average duration is 80 to 90 seconds, but it has exceeded this on many occasions. It was not built for contest work but as a semi-scale job. One of the unique features is the shock absorbing landing gear with rigid struts but shock absorbing mechanism inside the fuselage."

Lynn W. Christensen writes from 1020 Pacific Avenue, Long Beach, Cal., and sends us picture 4 of his Curtiss 052. This is a very neat job and has done a lot of flying. Some of the features are: the 3-bladed propeller and the "snap" wing fastener. Each wing is fastened at the fuselage with two dress snaps. There is also a snap at each end of the strut. This system provides rigidity in flight, but upon striking an object the wings come off without any breakage. To fly again the wings are snapped back in place. The model has made so many flights without breaking the framework that the paper now has come off from hard wear. Christensen says this is the fourth model he has built using this "snap" system. This is a fine idea and we suggest that other modelers try it.

We hear from Ward Vance, acting secretary of the East Bay Aeroncers Assn., Oakland, Calif. He says they elected Paul Romak president at their semi-annual election held Jan. 26th. His son, Earl, took over the office of secretary-treasurer. Les Martin was chosen vice-president and Gordy Peterson, sergeant-at-arms. His letter continues:

"In order to keep the fellows interested

during the winter months the Aeroncers make it a practice to sponsor other activities. At several of our weekly meetings movies of our fellows flying their ships have been shown by different members of our group. On Jan. 30th the club sponsored a movie on the history of aviation, which was open to the public and was held in one of the local high school auditoriums.

"These films were put on by Mr. W. R. Davis. Bill Davis started flying models in 1908, and learned to fly full scale jobs in 1912 in an old pusher. A flier in the last war and a member of the technical staff, Mr. Davis is still flying models and is a member of the East Bay Aeroncers. His pictures were gathered from many sources over a long period of time, and really give a true picture of the great progress aviation has made in its relatively short life.

"The Aeroncers have been doing some flying during the winter months too.

On Feb. 1st we had a club contest with a 25c entry fee, which was divided among the winners. Because the field was small only 10 second motor runs were allowed, and the total of two flights decided the winner.

"In top place was Bill Steese; in second was Charlie Riggs; third went to our newly-elected president, Paul Romak; and fourth place went to Earl Romak.

"Bill Steese, flying his scaled down Westerner powered by a Forster 29, also won first place in class B; and Don Foote, flying his class A Westerner powered by the new Dreadnaught 19 took first place in Class A."

Picture 8 shows Bill Steese with his Westerner, which won first place at the club contest.

Thomas F. Dennick of Library, Pa., Box 365, sends us picture 5, showing his Rearwin Speedster powered with a 60 cu. in. motor. It is a good size job, as you can see, and flies beautifully. Being a scale model it is very realistic in flight. Though flown five times during the winter months, each flight has been most successful and the ship hasn't been damaged in any way or even scratched.

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## THE AIRPLANE INDUSTRY WANTS MODEL BUILDERS . . . and MODEL BUILDERS want **Rogers MOTORS . . .**

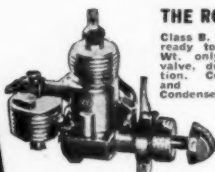
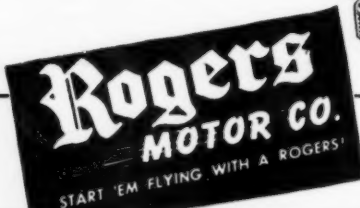
Experienced model builders by the hundreds have been going into the big airplane plants and into the technical services of the Nation. In building and flying airplane models—gas models—they have gained skill and basic aeronautical knowledge that starts them right in the great industry of today and the future. In training the youth of America, Rogers Motors fit into the master plan of defense. In working with these motors, you learn the

principles of the internal combustion motor—timing, ignition, heat conductivity—and in the power flight studies which they provide, the principles of aeronautics. The boy or young man with a Rogers Motor is fitting himself to serve his Country—and to make himself a technical expert. Produced in America's largest miniature motor plant, these motors combine light weight and durability with amazing power, speed and sure-fire starting.

### OTHER ROGERS MOTORS

ROGERS RMC 2, Class B . . . 9.75

ROGERS 35, Class C . . . 14.50



### THE ROGERS .29

Class B. Factory block tested ready to run. Displ. .292. Wt. only 4 3/4 lbs. Rotary valve, dual charge carburetion. Complete with Coil and Condenser . . . \$14.00

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Canadian Distribution:

Ontario Model Aircraft Co., 56 Esplanade  
Toronto, Canada

Don Hall of 15704 Southfield, Detroit, Michigan, a member of the Sky Guys club, sends picture 3, showing his class B gas model. He says:

"It is my own brain-child, designed and built as a change from those currently popular superlight, superflight, pylon jobs which bear no resemblance to full scale aircraft. The 'Swoose,' as it is named, was test flown at Cass Lake, 'on the ice,' during a local Pontiac, Mich., club contest. The little ship took off on a short run and climbed steadily in right circles, then flattened out into a slow glide to the left.

"On the whole the Swoose is one of the stablest models I have seen, and because of the wing slots it will not spin in under power. The slots, which can be seen in the picture, also aid in smoothing the 'pull out.' The ship has a 52" span and an area of 360 sq. in. Complete with powerplant it weighs 25 oz. The c.g. is about 50% back of the leading edge, and the tail moment arm is very short with a comparatively small stabilizer. This is made possible because of the stabilizing effect of the slots."

David Mellnish of 1209 S. Howard Ave., Tampa, Fla., sends us picture 12 of himself with a group of his models. He says:

"This picture proves that even a bullet through the chest cannot stop a really persistent model builder.

"I have built every kind of model that I could think of in the last few weeks, including flying wings and helicopters. The latter is especially recommended to those who can't get out of bed; their vertical flight requires no chasing.

"Other handy types are the 6 and 8 inch bedroom planes that fly in a tight circle—small canards with pusher props fly better than small conventional planes.

"Due to the difficulty of obtaining balsa wood I find that cardboard of like thickness may be substituted in many instances: for planking nose sections, center sections, wing ribs, small model wing tips, and even for light propeller blades which may be stuck in wooden hubs and twisted into excellent blades."

Denny Davis of the San Diego, Cal., Aeroncers sends us picture 11 in which he holds his winning class C gas job, powered with a 60 cu. in. motor. It won first place with a 21 min. flight at the last monthly contest held by the Aeroncers. Ross Houck took second, and Shelby Brown third, in class C. In class A-B first, second and third were won by Bill Noonan, Harvey Patton, Don Lutes, respectively. The San Diego Aeroncers' big annual contest was held in April.

Leo Koenig of 1206 7 St., Greeley, Colo.,—secretary-treasurer of the Greeley Prop-busters Gas Model Club—sends picture 13, showing a group of club members during a flying session on their field, a frozen bed of a large lake. Koenig writes:

"We have 9 members now after the Army took what it wanted. We formed the club in September 1941.

"Our biggest difficulty in obtaining new members is to get motors and kits for them to build, because one of the Articles of our club states that before anyone can join he must have a model. We are all looking for

an answer in the Air Ways column."

Well, have you ever thought of designing your own models and building them out of hardwood instead of balsa wood, even though there are only one or two motors in the club? These may be used in the models by various members merely by having demountable motor mounts. That is, build units embodying the motor, batteries, coil and complete motor system. These may be used in one ship and then in another—provided they are not lost. One of the first gas models ever built, the KG, used this system which proved very satisfactory.

Koenig relates an interesting incident which occurred while flying recently:

"The other day ice froze on my timer and my ship climbed and climbed until I almost lost sight of it; it flew into a cloud and then out. I had almost given it up for lost when a change of air current carried it back and it landed right near us on the lake, after being in the air for 20 minutes."

Maybe Koenig carried a horse-shoe in his pocket.

### Louisiana

We hear from John Cochran, secretary of the New Orleans Aero Club of 4506 Freret Street:

"Following are results of elections held during our last club meeting:

"President, Jack Thames; Vice-President, Don Wakely; Sec., John Cochran; Treas., Melvin Jung.

"The club has about thirty members who participate in all contests and are very active. Recently our field was 'burned down' and is now in good condition for extensive flying. For this reason we have decided to have contests every two weeks, using the 25c entrance fee for prizes.

"At our last contest, sponsored by Mod-Kraft Co., we had a large crowd despite cold, rainy weather. Even under these adverse conditions some splendid flights were made. Remembering that the day was cold and rainy and that we were flying from the shores of the lake, thereby eliminating the possibility of thermals, you will understand our pride in the time that was made. Winners and their average ratio were: John Cochran, 10-5/6; Melvin Jung, 10-1/2; Tom Steem, 9; Don Wakely, 8-3/4.

"For the past six months we have used the ratio system in New Orleans with tremendous success. The use of this system permits any length of motor run and prevents many arguments; however, due to a rather small field, most modelers use a short motor run. During the contest last week my best ratio was on a flight with a five sec. motor run and a minute glide, giving a twelve to one ratio. I had only to walk about a block to retrieve my ship.

"Our club makes the following challenge, addressed to all Southern clubs: We would like to have interclub competition with any club or group of clubs within driving distance. There have been few out of town contests and we are looking for new competition and are willing to put up half the prize money. Will other clubs contact us? How about you Mobile, Baton Rouge, Jackson, Port Arthur and all of the rest? Let's hear from you! Address all letters: John Cochran, 330 Walnut St., New Orleans, La."

### Ohio

Invitations soon will be sent to modelers

by Sec. Lloyd Traub of the Toledo Chapter, A.M.A., to attend the Second Annual Northwest Ohio Model Aviation Meet.

The contest is to be held May 17th at Telegraph Airport, Telegraph Road and Alexis Road, just north of Toledo, and is expected to attract entries from Michigan and Ohio, according to President Ray Humphreys, Sr. of the AMA chapter.

Prizes in merchandise for five classes of competition will be offered by the chapter and its sponsor, the Exchange Club of Auburndale-Toledo. The five events will include: classes A, B and C, flying scale, and solid scale. No rubber events will be held.

Full cooperation with the Board of Education of Toledo has been pledged by Toledo Chapter, AMA, in the board's program of construction of 1,000 scale model aircraft, according to Ray Humphreys, Sr.

With 100 active members, the chapter—known as the Toledo Model Manglers—has begun construction of the models. Meeting weekly at Central Y.M.C.A. the chapter members discuss plans; actual construction is done both in the members' home workshops and at school shops placed at their disposal.

The club is being set up as a unit of the Exchange-sponsored "Civil Air Service Squadron" and as such will act as an auxiliary of the Civil Air Patrol in this area.

Secretary of the Navy Frank Knox, commenting upon the CASS plan, pointed out that Exchange-sponsored model airplane clubs could perform a definite task by acting as inspectors of finished scale model aircraft, and as aircraft spotters, in their respective communities.

### Coming Events

**MODEL** airplane builders! Reserve June 6 and 7 for your trip to old Boston and participation in the 13th annual New England Championship Model Airplane Contest sponsored by the Jordan Marsh—Boston Traveler Junior Aviation League.

This crap is the biggest model airplane meet held in the northeastern part of the United States—more than 50 beautiful silver and gold cups, trophies, medals and merchandise awards will be given to the winners in the first three places of all events, and up to sixth place in many events.

The indoor events will take place on the 6th (a Saturday) in Boston Garden, a building with the best ceiling and floor space available. Outdoor activity will be located on the outskirts of Boston, Sunday June 7th, the definite site to be announced later to all who fill out and mail entry blanks.

All model builders of the United States and Canada are eligible for most of the many prizes offered in this two-day model airplane championship contest. Prizes are to be competed for by those under 21 years of age in several instances, but there are still enough prizes in the open class to make things interesting for the more adult flier.

The contest is held under sanction of the Academy of Model Aeronautics in Washington, D.C., governing body of organized model airplane activity in America, and will be conducted under A.M.A. contest rules. All records made by members of the

## LOOK! AMAZING NEW MOTOR UNIT!

HERE it is at last—the new and different motor unit you've been waiting for at a price any model builder can afford. It's **SKY-KOIL 32!** A light, sturdy spring-type motor that gives you more power, longer life and a brand new idea in model building—suspended power!

With a **SKY-KOIL 32** Motor you no longer need excessive bracing or complicated design. Longitudinal stress is not exerted by **SKY-KOIL 32** Motor.

With a **SKY-KOIL 32** there is little danger in crash landings. The motor distributes the shock, and protects the fuselage.

Easy to mount in any model. Quickly transferred from one model to another. Any type propeller easily attached to motor. Comes complete ready to install, with complete tested plans for a light-weight, easy-to-build model, all for only \$1.29!



- Weighs less than 1½ oz.
- Gives 200 propeller revolutions
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- Does not exert longitudinal stress

### MAIL COUPON WITH ONLY \$1.29

**SKY-KOIL 32 MOTORS** are precision built from quality materials. Your money back if not satisfied!

**ROKWELL INDUSTRIES, Inc.**  
3924 Juniata Street, St. Louis, Missouri  
Enclosed find \$1.29. Please send me one complete **SKY-KOIL 32** motor unit. If I am not thoroughly satisfied I will return motor within ten days for a full refund.

Name \_\_\_\_\_

Address \_\_\_\_\_

(Missouri purchasers please include Sales Tax)

A.M.A. will be certified by that organization.

Other details will be found in the entry blank. For entry blanks or information, write, wire, or phone:

Gunmar Munnick, *Director*; Jordan—Traveler Junior Aviation League; Jordan Marsh Company, Boston, Mass. (Telephone HANcock 9000, extension 564 or 220.)

### UTAH

Mr. L. D. Simmons, director of the Intermountain Aviation Club with headquarters at the "Tribune," Tribune Building, Salt Lake City, sends the following contest schedule:

May 24: Gasoline Model Contest at The Salt Flats.

June 27: Glider Meet, Glider Point.

July 25: Outdoor Stick Model Contest, not sure of place.

July 26: 2nd Gasoline Model Contest, The Salt Flats.

August 23: Outdoor Fuselage Contest; not sure of place.

September 27: Championship Gas Model Contest, Salt Flats.

October 18: Glider Meet, Glider Point.

"For your information, The Salt Lake Tribune-Telegram Intermountain Aviation Club is taking an active part in the model building for the United States Navy. The 'Salt Lake Tribune-Telegram' has provided a place for the model builders to work, as well as furnishing all the materials needed."

### OHIO

Fred S. Wetmore Jr., 15506 Madison Avenue, Lakewood, writes:

"On May 30th and 31st The American

## ATTENTION!!! JASCO CUSTOMERS

- No more balsa after May 15th! Special Brown Rubber out of stock since April 10th. Cause: Not enough balsa or rubber to meet the needs of the armine industry. If we are fortunate in obtaining more balsa or rubber, we will let you know. In the meantime please do not order Balsa, Thermic Kits or Rubber.
- Working on domestic products to meet the needs of model builders. Will announce when ready.
- P.S. What did you do today to beat the Japs?

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## Latest Developments in RADIO CONTROL

A booklet written for the radio control beginner as well as the expert. Features—"The theory of the RK-62 receiver"—"Control devices"—Table of A and B batteries—A comparison of the electrical and mechanical qualities of bakelite, stegite and polystyrene—Self-neutralizing escapement—sequence solenoid—rubber powered selector—rubber powered indicator—"Radio Control Circuits," an article written in answer to the questions asked in the thousands of letters received by us during the year 1941. Eighteen different radio control hook-ups with hook-up diagrams.

Ask your dealer or send twenty-five cents for illustrated instruction Manual. Stamps will not be accepted.

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**A DOUBLE WINNER**



## SALTABI'S

**NEWEST**

**CHAMP AT SKYSCRAPER & TRI-CITY MEETS, VA.**

A sure first-place Pennant Winner in either Class "B" or "C" competition. Newest of Sal Taibi's gas sensations. Plane has attracted so much attention with its astounding feat of 2 "firsts" inside of one week. AIR TRAILS lost no time in featuring this Double Champion on a double-page spread. Taibi's innovation of design will enable even a beginner to construct a gas model in record time.

**CLASS "B" AND "C" WINGSPAN 56"**

**\$3.95**

COMPLETE KIT (except motor)  
Stream-lite Wheels,  
Detailed Full-size  
Plans, Silkscreen Covering,  
Finished Prop., Formed Landing Gear, Printed Wood, Liquids, Dope Cement.



## VOUGHT-SIKORSKY

One of U.S. Navy's fastest fighters scaled to rubber-power design! The original is making history in its operations from Naval Aircraft Carriers. Inverted Gullwings with ultra streamlining from wing to fuselage. Tremendous performer. Kit features 3-blade prop.

**\$1.**

**WINGSPAN 37"**



## VULTEE Vengeance

Britain's newest and most punishing dive-bomber! Plane wrested sky control over The Channel from the Nazis. Out performs any known dive-bomber in the world today. This faithful replica was accurately scaled down for magnificent rubber-power performance by Sid Struhl.

**\$1.50**



## GRUMMAN SKYROCKET

U. S. Navy's twin-motor terror of the skies. Attains a top speed of 450 m.p.h. Climbs 6,000 ft. per minute. World's most heavily armed fighter. That's the plane Sid Struhl followed in designing the exact rubber-power scale model with a 42" wingspan. Its twin props give it terrific climb, tremendous stability and no torque.

**\$1.50**

**WINGSPAN 42"**

**OTHER H & F KITS**

STINSON "105".....	\$1.00
STUKA DIVE-BOMBER.....	\$1.00
MR. MULLIGAN.....	\$1.00

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**DISTRIBUTORS JOBBERS**  
Write for special discount on the entire H & F Flying Line.

Airlines Gas Model Club of Cleveland, Ohio, will hold an outstanding model airplane meet second only to the Nationals which will be held later in the year in Chicago.

"This two-day meet will feature 10 sponsored events, notably among them the Junior Thompson Trophy for G-Line type ships with motors over .300 cu. in. disp., and the L. W. Greve Memorial Trophy for G-Line under .300 cu. in. disp.

"There will also be three open gas, tow-line glider, stick and fuselage events; all events will have at least a purse of \$75.00."

### Notices

Model manufacturers now are producing kits for the models to be built in the U.S. Navy Model Building Program. These follow specifications of the U.S. Office of Education and the Navy. Therefore the program should not be held up due to shortage of materials and supplies.

The following two M.A.N. readers desire correspondence with other Air Ways readers and Sky Scouts:

Miss Marion Rathburn, 650 S. 4 Street, Aurora, Illinois.

Don Darrow, 2325 S. 11 Avenue, Broadview, Maywood, Illinois.

### N.A.C.A. Employment for Girl Modelers

Feminine model aircraft makers are wanted by the National Advisory Committee for Aeronautics. The Civil Service Commission has asked the N.A.A. Academy of Model Aeronautics to announce that NACA will hire immediately girls between the ages of 16 and 25 who are experienced modelplane builders and fliers to work at the Government's aviation laboratories at Langley Field, Va. Their work will be vital to the war effort and will consist of specialized duties, including work on aircraft instruments and the balancing and

testing of airplane models in the NACA wind tunnels. Starting salary is \$1,260 a year with full opportunities for advancement. Applicants who qualify will be hired immediately, pending the establishment of a Civil Service register.

Qualified girl aeromodelers should write to William R. Howell, special Civil Service representative to the local Civil Service Board, Fort Munroe, Va. Ask for application No. 4-691, which Mr. Howell will send together with any other additional information that is desired.

### VICTORY

### Flash News

(Continued from page 2)

Sunkist Southern California orange juice for United Airlines' Mainliner passengers. Five hundred gallons prepared at Los Angeles Union Air Terminal lasted only four days but plans are under way for all Mainliners throughout the nationwide routes of the line to be prepared to serve this delicacy.

Vega "Starliner," the Lockheed Unitwin tricycle light transport, badly wrecked Lockheed's small factory field recently. Engine failure was blamed by Marshall Heable, chief test pilot.

New wings for Honolulu: The army will shortly increase Hickham Field, Hawaii, with 112 pursuit planes, 60 bombers, 14 observation planes, 5 auxiliary amphibians and 3 transports for the Air Corps 18th Wing.

Pan American Airways transatlantic line has been shifted to the southern route for the duration of winter. How neutrality revision bill prohibiting American ships in war zones will affect flying ships is difficult to prophesy.

Latest report from Japanese Round-the-World fliers: After a rough seven hours and six minutes flight from Buenos Aires the huge "Nippon" landed at Santos, Brazil, and made plans to continue to Sao Paulo immediately. Next stop: the Atlantic Jump to Europe!

Douglas DC-4 completely dismantled and packed ready for voyage to Tokyo and reassembly at Japanese Air Transport Company's plant. Oakland craters bid high and low for the job, which consumed over a million board feet!

Italian Altitude Record: Colonel Nicola Di Mauro in a flight of one hour and 58 minutes reached 13,554 meters (45,557 feet) in a Savoia-Marchetti seaplane bettering by nearly two thousand feet Lieut. Apollo Soucek's ten-year-old navy record.

Boeing 307-S airliners will be used by Pan American airlines when and if the C.A.A. grants its petition for Los Angeles to Mexico City route three times weekly.

The Swedish Parliament has appropriated 36,000,000 crowns (\$9,000,000) for the purchase of 102 American warplanes of an undisclosed make.

Aviation adventure isn't dead: Pilot Nat Browne through sleet and ice to rescue marooned Mrs. Christian Beckman and 18-day-old baby near wilderness lake 12 miles from McGrath, Alaska. He got off safely and made the 150 mile flight to Anchorage without mishap in 10-below-zero weather.

Lewis W. Imm's new "Libroscope" computes in less than sixty seconds the

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## Dick Korda's "WORLD RECORD HOLDER"

WINNER OF MORE CONTESTS THAN ANY MODEL IN THE WORLD!!

Proven under all conceivable conditions and consistently winning. There's no hit and miss flying here. A snap for beginners to make. Flying satisfaction guaranteed.

AT YOUR DEALER



BY MAIL ADD 15c

Accept No Substitutes

No other is just as good.

Insist on the original BURD MODEL!

### KIT INCLUDES

All the latest proven superior design features. Polyhedral Wing for that plus stability in crucial flying moments. A One-Bladed Collapsible, No Drag Propeller gives that plus performance so essential in Contest Flying where every additional split second counts. A Ready Formed All Steel Landing Gear provides solid support in landing and taking off. Added to these features is superior BURD quality with Stress-Tested Balsa Wood.



Mr. Jobber:

Territories are open!

Deliveries are being made!

Write for full information on our

complete line of models in popular price ranges of 10c, 25c, 50c, and \$1.00.

## burd MODEL AIRPLANE COMPANY

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Baltimore, Md.

cross-country flight plan of huge airliners which formerly took 45 minutes laborious plotting and charting. The former Bureau of Air Commerce Inspector, now residing in Burbank, California, explained that the mechanism works by a system of pointers in which known facts (wind, true course, gross weight, schedule time, altitude, temperature, horsepower, engine speed, etc.) are set by pointer knobs. As each pointer is set others move automatically into position and within one minute the pilot may have the entire "flight plan" mathematically complete.

Dr. Arthur Holly Compton, Nobel Prize physicist, Dr. Gerhardt Herzog of Zurich, Switzerland, and Winston Bostwick went aloft to 29,000 feet in a chartered United Airlines plane carrying 800 pounds of equipment to photograph cosmic rays with special filters and photographic apparatus.

Anthony H. G. Folker's palatial "yacht of tomorrow" the famed "Q.E.D." burned and sank in the Hudson River off Yonkers recently. Modeled after airplane design, the giant ship had triple screws with one 800 and two 600 horsepower motors. It cost \$200,000 to build. The famed designer

was not on board at the time.

T.W.A. has absorbed the 564-mile Marquette Airlines St. Louis-Cincinnati-Dayton-Detroit route which used aged trimotored Stinson monoplane transports.

Fourteen Bristol Blenheim bombers were recently sold and flown to Rumania from London. Eleven Heinkel pursuit planes were also delivered, an odd nationalistic mixture of fighting craft.

Five Boeing "Stratoliners" have been purchased by T.W.A. to lower the line's famed New York-Los Angeles route time to 13 hours, 40 minutes in three-stop flights.

**PERSONALITIES**—Mr. Edward P. Warner, aviation pioneer and vice-chairman of the Civil Aeronautics Board, is now en route to England to confer on aviation matters. He will talk to R.A.F. chiefs on the subject of how many and what types of planes they most need in the battle for Britain—and the United States!

D. W. Tomlinson, vice-prexy of T.W.A. has been commissioned by the N.A.C.A. to conduct special flight research on the problem of icing and its successful elimina-

tion through de-icing methods.

Ranger Engine Division of Fairchild Aircraft and Engine Corporation is now under way on the constructing of a \$1,478,000 plant at Farmingdale, Long Island, New York.

Production of aircraft cannon in this country is well under way with the Superior Tool & Die Company of Detroit under way on a tremendous order for 20 mm. Oerlikon designs capable of firing 400 rounds per minute. Oldsmobile and Pontiac Motor Car Divisions of General Motors are now building large numbers of 20 mm. Hispano-Suiza cannon firing 700 rounds per minute. The Superior firm is also engaged in manufacturing twin-gun turrets of the type designed for the Martin B-26 bomber which will be standardized on all new light attack-bomber designs.

Ford has completed plans for erection of its huge Ypsilanti plant to build four-motored Consolidated B-24 bombers. Chrysler and Hudson Motor Car Companies are moving forward on plans to build sub-assemblies for the new Kansas City and Dallas plants of Douglas and North American.

## CLASSIFIED DIRECTORY

Advertise in this directory for quick profitable results! Rates 10¢ per word including name and address. Minimum 20 words. REMITTANCES MUST ACCOMPANY ALL ADS FOR THIS DIRECTORY. Advertisements for July issue must be in by May 9th.

STEER horns for sale, seven foot spread, polished and mounted. Rare opportunity. Texas longhorn cattle now extinct. Free Photo. Lee Bertillon, Mineola, Texas.

PROMPT service on your favorite advertised kit or motor, if ordered from Brooklyn Hobby Center, 4323 W. 35th, Cleveland, Ohio.

MOTORS. New and used, bought, sold and exchanged. Highest price paid for your motor. Write before you buy and save money.

Workers on the P-43 Lancer and P-47 Thunderbolt, fast and high-flying Republic fighters are now being entertained at lunch, not by phonograph records but by a WPA symphony which includes group singing.

A new flying motorcycle has been perfected by Dr. Eugene Kay of San Francisco. The contraption would make it possible to land thousands of motorized troops behind enemy lines. After landing, the rotor blades fold and the motorcycles zip along at 60 miles an hour.

Jack Frye, president of Transcontinental and Western Air says the five Boeing four-engine stratoliners which the company owns are "not for sale at any price." Negotiations were recently reported by the British Purchasing Commission to buy the huge ships but Frye reports that valuable stratosphere experience is being gained in the interest of the Army and Navy of this country. However, four Boeing flyingboats will be delivered to the British as Coastal Patrol bombers and fleet spotters.

Sixteen passengers of an Eastern Airline Douglas DC-3 transport suffered injuries but all will recover in a crash into the swamp of Vero Beach, Florida. Gerald O'Brien, pilot, said that a terrific storm had driven them to the ground and he had lost the beam and did not know where he was.

A number of Boeing B-17 Flying Fortress four-motored bombers have arrived safely in England after trans-Atlantic crossings in record time. Consolidated "Liberator" bombers have also been flown across and more will be dispatched immediately upon completion. A flight of Consolidated Royal Air Force bombers has arrived in Singapore to enforce the full squadron of Brewster Buffalo (MODEL AIRPLANE NEWS, May, 1941 issue) fighters already stationed there. Between 30 and 40 Canadian Royal Air Force pilots are now on duty at McChord Field, Tacoma, taking instructions on four-motored flying fortresses of the Air Corps. Upon completion of their training they will fly British versions of the giant ships to England.

Leaders in aviation circles were surprised recently to see large full page advertisements of a sleek-looking twin-engine Naval dive-bomber, the FB-1 designed and manufactured by the Freeman Aircraft Company of Santa Monica, California. Tone of the ad suggested that actual Naval orders had been received for the craft. FLASH NEWS, after thorough investigation, wishes to record that THERE IS NO Freeman Aircraft Company and never has

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Comet distributors, carrying complete stocks of Comet kits and supplies, are ready to serve dealers in every part of the country—promptly and efficiently.

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Airplane Co.  
Pacific Coast Distributor  
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Los Angeles, California  
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3108 S. 13th St.  
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Model Airplane Supply Co.  
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New York Met. Area Distributor  
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Order Dept.—Office: 429-7th Ave., New York City**

Modelcraft Distributors  
Twin City Distributors  
1336 S. Miss. Riv. Bl., St. Paul, Minn.

**JOHN DUNN, INC.  
Boston Met. Area and Maine  
Distributors  
87 High St., Boston, Mass.**

Germantown Model Supplies  
Metropolitan Philadelphia Distr.  
5638 Chew St., Philadelphia, Pa.

**DAYTON HOBBY SERVICE  
Ohio Distributor  
313 S. Main St.  
Dayton, Ohio**

**DOUGLAS MODELS CO.  
Utah Distributor  
105 E. Second South St.  
Salt Lake City, Utah**

Calvin C. Wood  
Colorado Distributor  
375 S. Williams, Denver, Colo.

**LLOYDS HOBBYCRAFT  
Canadian Distributor  
635 St. Clair Ave., West  
Toronto, Ontario, Canada**

**Howard E. Ruth Model & Supply Co.  
Distributor Buffalo Area  
1455 Genesee Street  
Buffalo, N. Y.**

**AIRCO MODEL SUPPLY  
Cent. and Eastern Michigan Distr.  
1485 Antietam St.  
Detroit, Mich.**

**JOSEPH KUSSMAUL  
Gary, Hammond & East Chi. Distr.  
609 W. Chicago Avenue  
East Chicago, Indiana**

Walthour & Hood Co.  
Miss., Ala., Ga. Distributor  
Pryor St. & Auburn Av., Atlanta, Ga.

**KING MODEL AIRPLANE CO.  
Kansas City, Mo. Distributor  
4801 Independence Ave.  
Kansas City, Mo.**

J. Spokane & Co.  
Pittsburgh Area Distributor  
1106 Fifth Ave., Pittsburgh, Pa.

**HAINES HOBBY  
Distributors for the Reading Area  
44 S. Sixth St., Reading, Pa.**

**SCRANTON HOBBY CENTER  
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350 Adams Ave., Town Hall Bldg.  
Scranton, Pa.**

been. Subject of a sweeping Army and Navy investigation, the firm closed its tiny offices composed of only a drafting board, an office desk and a lucid mind with an artist's hand in the person of the mysterious "Mr. Freeman," who left without word. Magazines printing these ads remained unpaid and the reason behind all this is shrouded in mystery.

Of interest to aviation enthusiasts everywhere is the recent news by the Navy Department that those complicated plane designations are being replaced by type names, such as has been used by the Royal Air Force for many years. So, good-bye to those XPB2S3CO-1AIFB, etc., which so many of us have studied for years in order to understand. Here are the most prominent ships with their new

names: Brewster (F2A-1) "Buffalo," Consolidated (PBY) "Catalina," taken from the British names given these ships. Among the regular service ships: "Dive-bombers: Curtiss (SB2C-1) "Helldiver," Douglas (SBD-1) "Dauntless," Vought-Sikorsky (SB2U-1) "Vindicator," Brewster (SB2A-1) "Buccaneer." Fighters: Grumman (F4F-1) "Wildcat," Vought-Sikorsky (F4U-1) "Corsair." Observation-Scout: Curtiss (SOC-3) "Seagull," Vought-Sikorsky (OS2U-1) "Kingfisher." Patrol-Bombers: Boeing (XPBB-1) "Sea Ranger," Martin (PBM-1) "Mariner," and Consolidated (PB2Y-1) "Coronado." Torpedo-Bombers: Douglas (TBD-1) "Devastator," and Grumman (XTBF-1) "Avenger."

VICTORY

Model Airplane News - June 1942

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Postage 25c, none if ordered from dealer.

Carl Goldberg is mighty busy these days—and if you don't see any new gas models coming off his designing board, it's because his designing genius is being devoted more and more to the nation's war effort. But, as the new Comet Interceptor proves, he isn't too busy to come through with sensational improvements on Comet gas models.



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